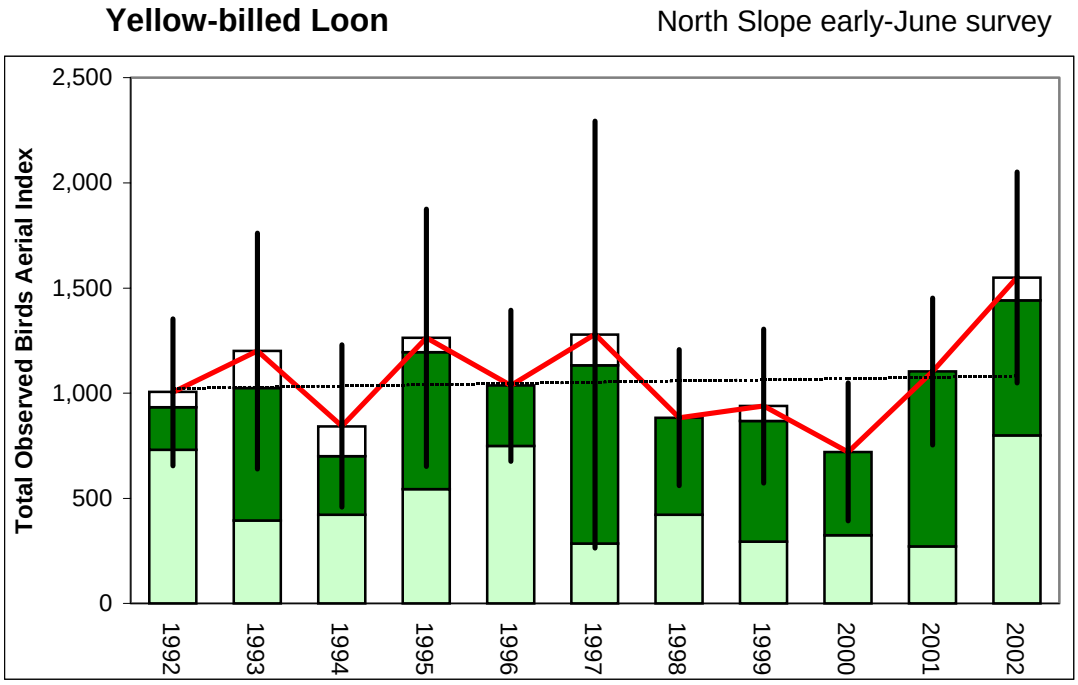


Aerial index: Total birds observed

year	sg	2*pr	flocks	Index	Std Err
1992	731	202	73	**1005**	178
1993	394	630	176	**1200**	286
1994	422	280	141	**844**	197
1995	544	650	69	**1263**	312
1996	750	286	0	**1036**	183
1997	285	848	145	**1279**	518
1998	422	462	0	**884**	165
1999	295	574	70	**939**	187
2000	325	396	0	**721**	167
2001	272	832	0	**1104**	178
2002	800	642	108	**1551**	256

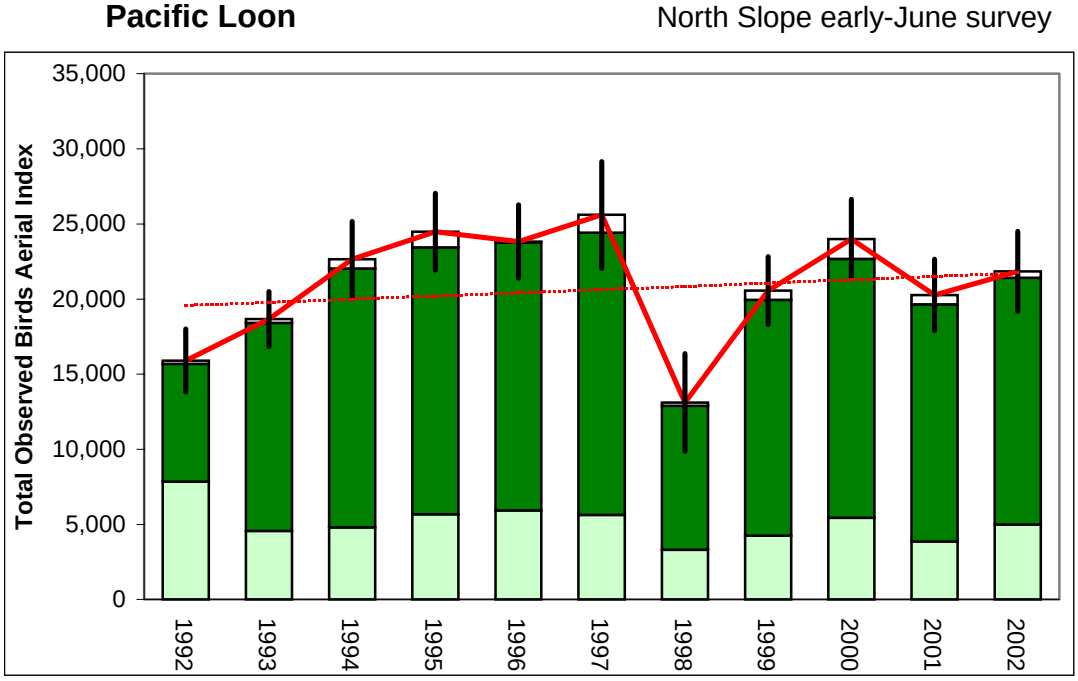
YBLO

n =	11
mean =	1075
slope =	0.0056
SE slope =	0.0219
Growth Rate =	**1.006**
low 90%ci GR =	0.970
high 90%ci GR =	1.042
regression resid CV =	0.230
avg sampling err CV =	0.220

min yrs to detect 50%/10yr change:

w/ regress resid CV =	10.4
w/ sample error CV =	10.1

Figure 8. Population trend for Yellow-billed Loons (*Gavia adamsii*) observed on aerial survey transects sampling 30,755 km^2 of wetland tundra on the North Slope of Alaska. The total birds observed population index is the sum of birds observed as singles, birds in pairs, and all birds in flocks, indicated by column divisions from bottom to top. Vertical lines indicate 95% confidence intervals based on sampling error calculated among transects. Stratification included 11 physiographic regions. Average annual growth rate is calculated by log-linear regression. Power calculations use alpha and beta set at p=0.10 and a coefficient of variation based on either regression residuals or sampling errors. The power of the survey to detect trends can be compared for each species using an estimate of the minimum number of years necessary to detect a given slope of –0.0693, a 50% decline in 10 years.



Aerial index: Total birds observed

year	sg	2*pr	flocks	Index	Std Err
1992	7833	7858	215	**15906**	1067
1993	4559	13860	253	**18671**	942
1994	4803	17228	618	**22648**	1286
1995	5664	17772	1052	**24488**	1307
1996	5928	17832	71	**23832**	1240
1997	5623	18798	1189	**25610**	1808
1998	3315	9580	226	**13120**	1650
1999	4245	15702	628	**20575**	1149
2000	5444	17240	1310	**23994**	1342
2001	3864	15788	621	**20273**	1210
2002	5004	16418	428	**21850**	1356

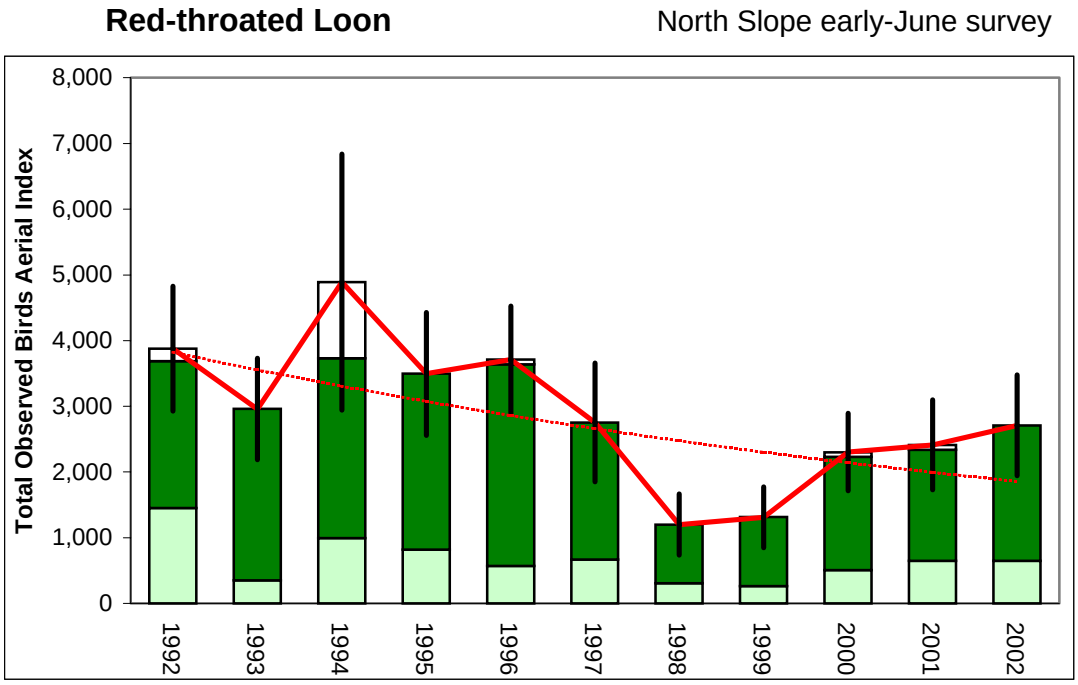
PALO

n =	11
mean =	20997
slope =	0.0104
SE slope =	0.0202
Growth Rate =	**1.010**
low 90%ci GR =	0.977
high 90%ci GR =	1.045
regression resid CV =	0.212
avg sampling err CV =	0.065

min yrs to detect 50%/10yr change:

w/ regress resid CV =	9.8
w/ sample error CV =	4.5

Figure 9. Population trend for Pacific Loons (*Gavia pacifica*) observed on aerial survey transects sampling 30,755 km^2 of wetland tundra on the North Slope of Alaska. The total birds observed population index is the sum of birds observed as singles, birds in pairs, and all birds in flocks, indicated by column divisions from bottom to top. Vertical lines indicate 95% confidence intervals based on sampling error calculated among transects. Stratification included 11 physiographic regions. Average annual growth rate is calculated by log-linear regression. Power calculations use alpha and beta set at p=0.10 and a coefficient of variation based on either regression residuals or sampling errors. The power of the survey to detect trends can be compared for each species using an estimate of the minimum number of years necessary to detect a given slope of –0.0693, a 50% decline in 10 years.



Aerial index: Total birds observed

year	sg	2*pr	flocks	Index	Std Err
1992	1453	2236	188	**3878**	485
1993	357	2604	0	**2960**	393
1994	997	2732	1162	**4891**	994
1995	823	2672	0	**3495**	476
1996	571	3066	72	**3709**	417
1997	670	2084	0	**2754**	461
1998	311	890	0	**1202**	236
1999	266	1048	0	**1313**	235
2000	511	1724	69	**2305**	300
2001	649	1694	72	**2415**	350
2002	649	2062	0	**2711**	391

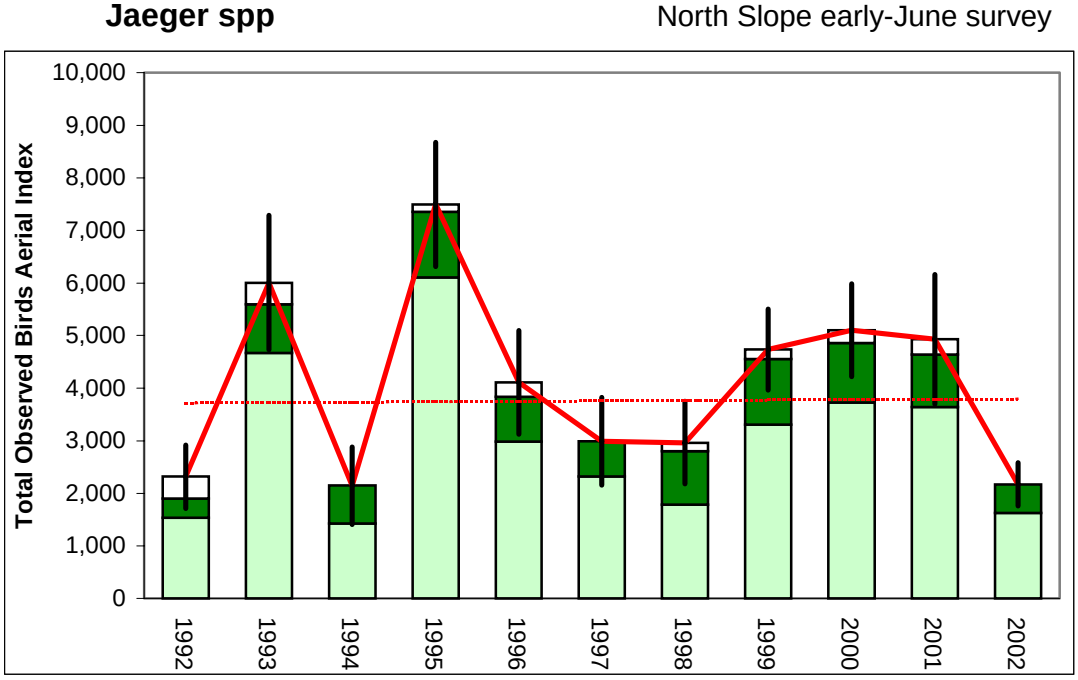
RTLO

n =	11
mean =	2876
slope =	-0.0722
SE slope =	0.0362
Growth Rate =	**0.930**
low 90%ci GR =	0.877
high 90%ci GR =	0.987
regression resid CV =	0.380
avg sampling err CV =	0.152

min yrs to detect 50%/10yr change:

w/ regress resid CV =	14.5
w/ sample error CV =	7.9

Figure 10. Population trend for Red-throated Loons (*Gavia stellata*) observed on aerial survey transects sampling 30,755 km^2 of wetland tundra on the North Slope of Alaska. The total birds observed population index is the sum of birds observed as singles, birds in pairs, and all birds in flocks, indicated by column divisions from bottom to top. Vertical lines indicate 95% confidence intervals based on sampling error calculated among transects. Stratification included 11 physiographic regions. Average annual growth rate is calculated by log-linear regression. Power calculations use alpha and beta set at p=0.10 and a coefficient of variation based on either regression residuals or sampling errors. The power of the survey to detect trends can be compared for each species using an estimate of the minimum number of years necessary to detect a given slope of –0.0693, a 50% decline in 10 years.



Aerial index: Total birds observed

year	sg	2*pr	flocks	Index	Std Err
1992	1534	366	418	**2318**	308
1993	4670	928	408	**6006**	652
1994	1425	722	0	**2146**	377
1995	6106	1244	145	**7496**	602
1996	2985	854	271	**4109**	502
1997	2318	674	0	**2991**	427
1998	1783	1020	160	**2964**	401
1999	3307	1248	181	**4736**	394
2000	3730	1128	245	**5103**	452
2001	3640	996	294	**4930**	629
2002	1630	540	0	**2170**	209

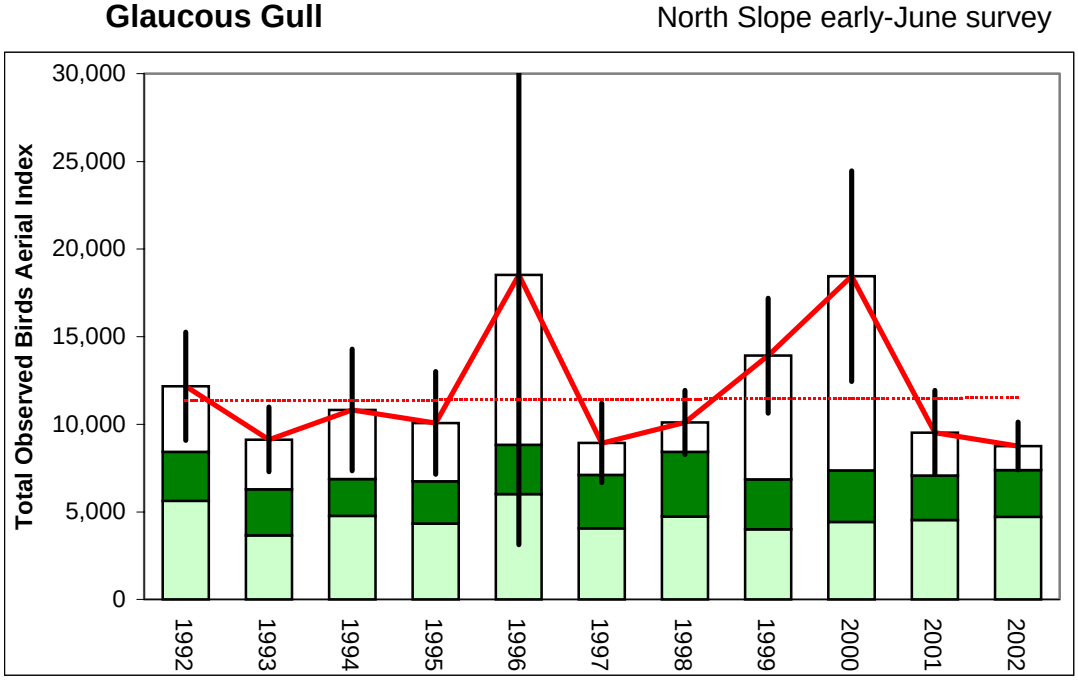
JAEG

n =	11
mean =	4088
slope =	0.0021
SE slope =	0.0436
Growth Rate =	**1.002**
low 90%ci GR =	0.933
high 90%ci GR =	1.077
regression resid CV =	0.457
avg sampling err CV =	0.118

min yrs to detect 50%/10yr change:

w/ regress resid CV =	16.4
w/ sample error CV =	6.6

Figure 11. Population trend for jaeger species (*Stercorarius parasiticus, S. pomarinus, S. longicaudus*) observed on aerial survey transects sampling 30,755 km^2 of wetland tundra on the North Slope of Alaska. The total birds observed population index is the sum of birds observed as singles, birds in pairs, and all birds in flocks, indicated by column divisions from bottom to top. Vertical lines indicate 95% confidence intervals based on sampling error calculated among transects. Stratification included 11 physiographic regions. Average annual growth rate is calculated by log-linear regression. Power calculations use alpha and beta set at p=0.10 and a coefficient of variation based on either regression residuals or sampling errors. The power of the survey to detect trends can be compared for each species using an estimate of the minimum number of years necessary to detect a given slope of –0.0693, a 50% decline in 10 years.



Aerial index: Total birds observed

year	sg	2*pr	flocks	Index	Std Err
1992	5635	2792	3732	**12160**	1571
1993	3667	2616	2850	**9134**	940
1994	4766	2108	3945	**10818**	1771
1995	4342	2406	3331	**10080**	1496
1996	6002	2828	9699	**18529**	7859
1997	4060	3050	1825	**8934**	1154
1998	4728	3704	1672	**10104**	930
1999	4001	2844	7078	**13923**	1673
2000	4423	2936	11084	**18445**	3068
2001	4538	2524	2456	**9519**	1227
2002	4718	2658	1385	**8762**	694

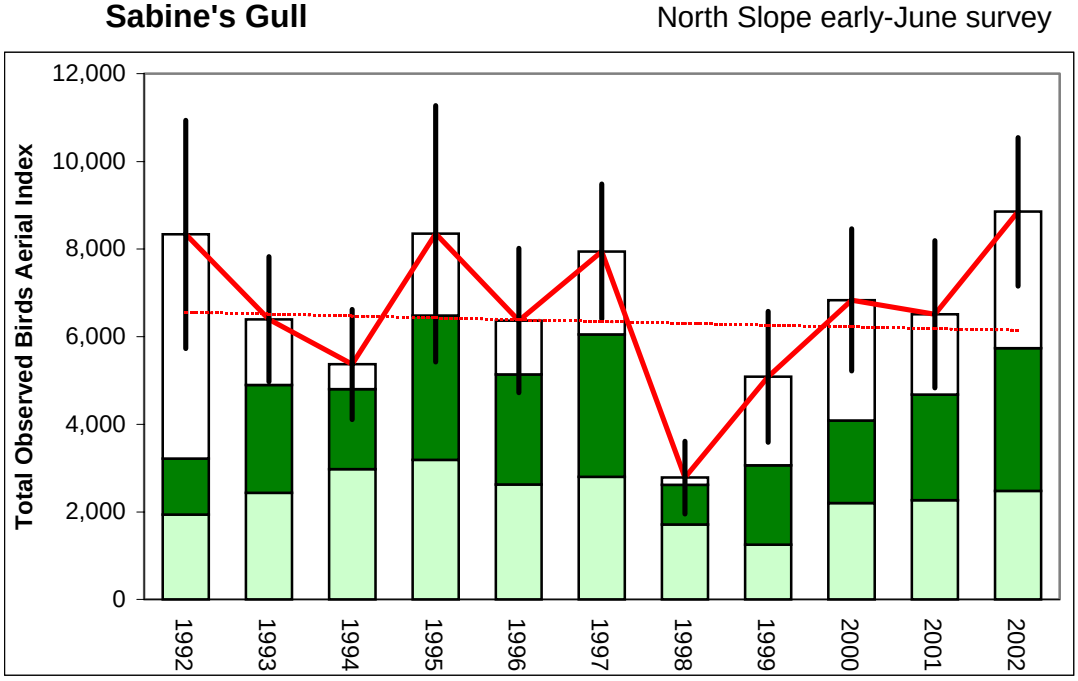
GLGU

n =	11
mean =	11855
slope =	0.0015
SE slope =	0.0276
Growth Rate =	**1.002**
low 90%ci GR =	0.957
high 90%ci GR =	1.048
regression resid CV =	0.289
avg sampling err CV =	0.153

min yrs to detect 50%/10yr change:

w/ regress resid CV =	12.1
w/ sample error CV =	7.9

Figure 12. Population trend for Glaucous Gulls (*Larus hyperboreus*) observed on aerial survey transects sampling 30,755 km^2 of wetland tundra on the North Slope of Alaska. The total birds observed population index is the sum of birds observed as singles, birds in pairs, and all birds in flocks, indicated by column divisions from bottom to top. Vertical lines indicate 95% confidence intervals based on sampling error calculated among transects. Stratification included 11 physiographic regions. Average annual growth rate is calculated by log-linear regression. Power calculations use alpha and beta set at p=0.10 and a coefficient of variation based on either regression residuals or sampling errors. The power of the survey to detect trends can be compared for each species using an estimate of the minimum number of years necessary to detect a given slope of –0.0693, a 50% decline in 10 years.



Aerial index: Total birds observed

year	sg	2*pr	flocks	Index	Std Err
1992	1939	1284	5111	**8333**	1329
1993	2431	2462	1505	**6399**	729
1994	2976	1824	567	**5367**	640
1995	3191	3290	1866	**8348**	1493
1996	2621	2516	1232	**6369**	839
1997	2801	3248	1896	**7945**	787
1998	1711	906	166	**2784**	423
1999	1250	1808	2026	**5084**	762
2000	2201	1890	2746	**6836**	828
2001	2268	2406	1837	**6511**	856
2002	2480	3256	3116	**8851**	864

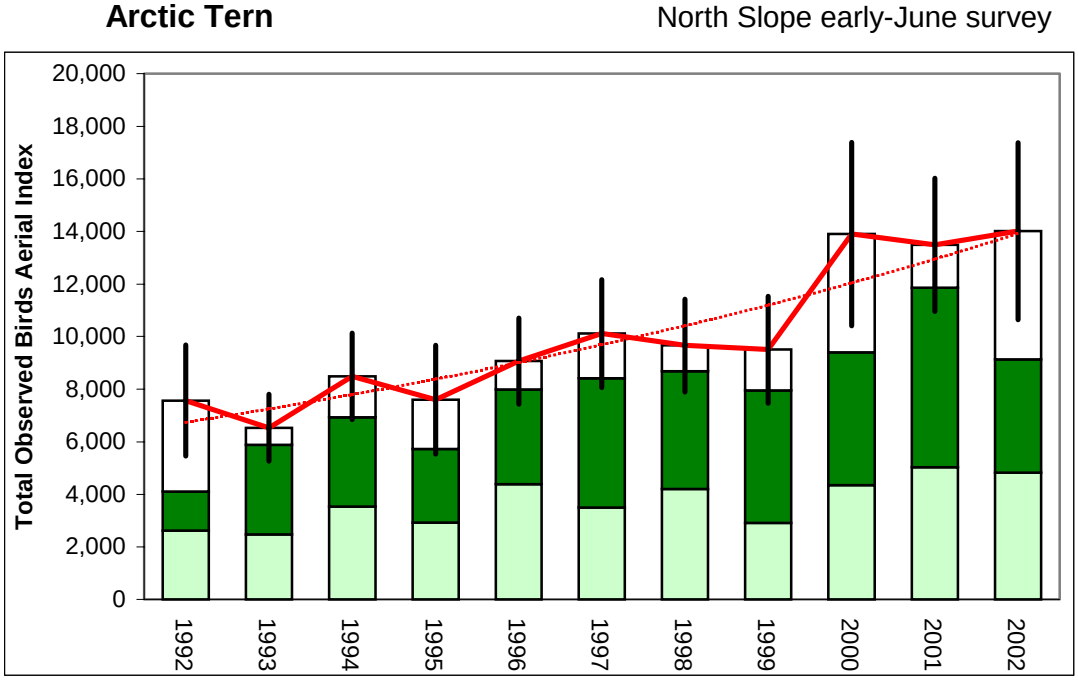
SAGU

n =	11
mean =	6621
slope =	-0.0066
SE slope =	0.0328
Growth Rate =	**0.993**
low 90%ci GR =	0.941
high 90%ci GR =	1.049
regression resid CV =	0.345
avg sampling err CV =	0.132

min yrs to detect 50%/10yr change:

w/ regress resid CV =	13.6
w/ sample error CV =	7.2

Figure 13. Population trend for Sabine's Gulls (*Xema sabini*) observed on aerial survey transects sampling 30,755 km^2 of wetland tundra on the North Slope of Alaska. The total birds observed population index is the sum of birds observed as singles, birds in pairs, and all birds in flocks, indicated by column divisions from bottom to top. Vertical lines indicate 95% confidence intervals based on sampling error calculated among transects. Stratification included 11 physiographic regions. Average annual growth rate is calculated by log-linear regression. Power calculations use alpha and beta set at p=0.10 and a coefficient of variation based on either regression residuals or sampling errors. The power of the survey to detect trends can be compared for each species using an estimate of the minimum number of years necessary to detect a given slope of –0.0693, a 50% decline in 10 years.



Aerial index: Total birds observed

year	sg	2*pr	flocks	Index	Std Err
1992	2621	1478	3472	**7571**	1077
1993	2473	3412	652	**6537**	646
1994	3530	3404	1551	**8486**	836
1995	2932	2802	1863	**7597**	1053
1996	4380	3608	1080	**9068**	836
1997	3500	4918	1694	**10112**	1047
1998	4206	4480	978	**9663**	901
1999	2911	5038	1554	**9503**	1040
2000	4347	5056	4503	**13907**	1778
2001	5024	6836	1634	**13495**	1292
2002	4819	4314	4882	**14014**	1717

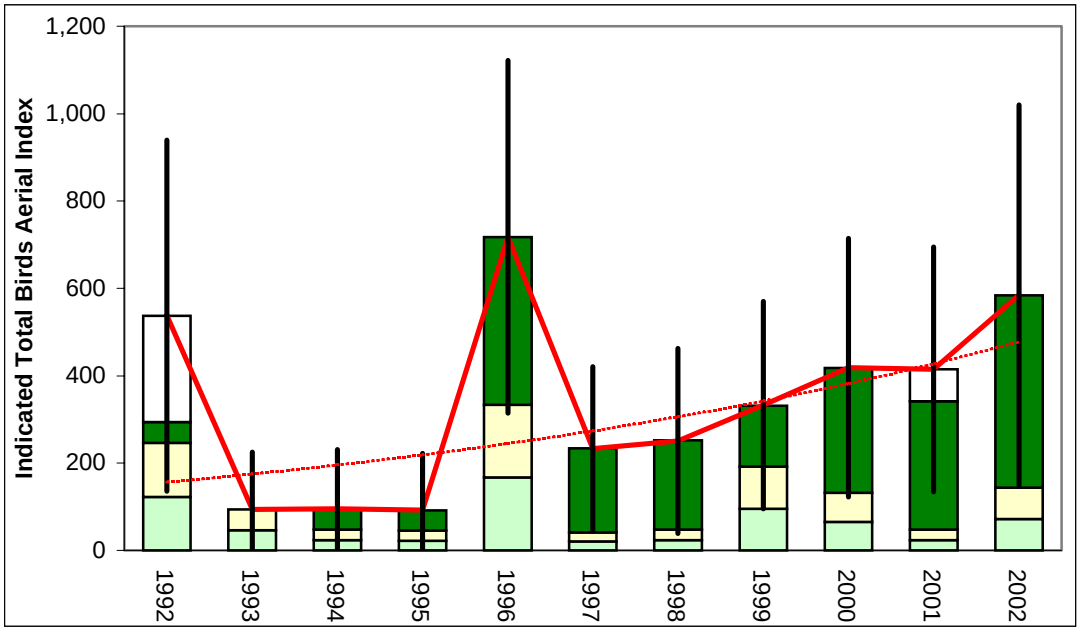
ARTE

n =	11
mean =	9996
slope =	0.0725
SE slope =	0.0099
Growth Rate =	**1.075**
low 90%ci GR =	1.058
high 90%ci GR =	1.093
regression resid CV =	0.104
avg sampling err CV =	0.111

min yrs to detect 50%/10yr change:

w/ regress resid CV =	6.1
w/ sample error CV =	6.4

Figure 14. Population trend for Arctic Terns (*Sterna paradisaea*) observed on aerial survey transects sampling 30,755 km^2 of wetland tundra on the North Slope of Alaska. The total birds observed population index is the sum of birds observed as singles, birds in pairs, and all birds in flocks, indicated by column divisions from bottom to top. Vertical lines indicate 95% confidence intervals based on sampling error calculated among transects. Stratification included 11 physiographic regions. Average annual growth rate is calculated by log-linear regression. Power calculations use alpha and beta set at p=0.10 and a coefficient of variation based on either regression residuals or sampling errors. The power of the survey to detect trends can be compared for each species using an estimate of the minimum number of years necessary to detect a given slope of –0.0693, a 50% decline in 10 years.



Aerial index: Indicated total birds

year	2*sg	2*pr	flocks	Index	Std Err
1992	246	48	243	**538**	205
1993	94	0	0	**94**	67
1994	48	48	0	**96**	69
1995	46	46	0	**93**	66
1996	334	384	0	**718**	206
1997	42	192	0	**233**	96
1998	48	204	0	**251**	108
1999	192	140	0	**333**	121
2000	132	286	0	**419**	151
2001	48	294	73	**415**	143
2002	144	440	0	**585**	222

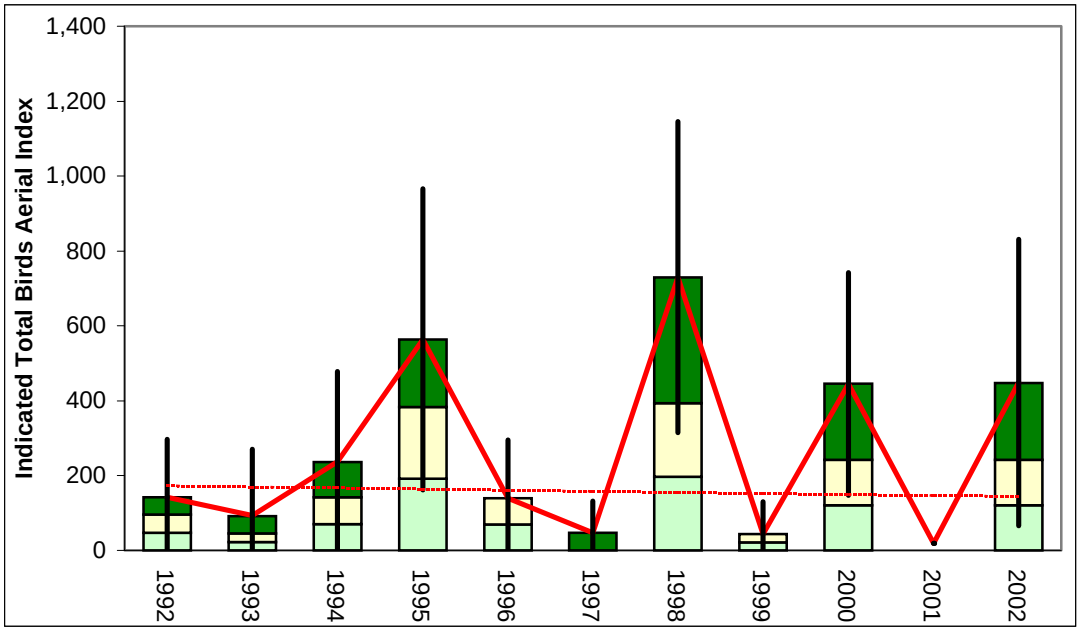
RBME

n =	11
mean =	343
slope =	0.1116
SE slope =	0.0669
Growth Rate =	**1.118**
low 90%ci GR =	1.002
high 90%ci GR =	1.248
regression resid CV =	0.702
avg sampling err CV =	0.464

min yrs to detect 50%/10yr change:

w/ regress resid CV =	21.9
w/ sample error CV =	16.6

Figure 15. Population trend for Red-breasted Megansers (*Mergus serrator*) observed on aerial survey transects sampling 30,755 km^2 of wetland tundra on the North Slope of Alaska. The indicated total birds population index is the sum of birds observed as singles, an equal number of unseen but indicated single birds, birds in pairs, and all birds in flocks, indicated by column divisions from bottom to top. Vertical lines indicate 95% confidence intervals based on sampling error calculated among transects. Stratification included 11 physiographic regions. Average annual growth rate is calculated by log-linear regression. Power calculations use alpha and beta set at p=0.10 and a coefficient of variation based on either regression residuals or sampling errors. The power of the survey to detect trends can be compared for each species using an estimate of the minimum number of years necessary to detect a given slope of –0.0693, a 50% decline in 10 years.



Aerial index: Indicated total birds

year	2*sg	2*pr	flocks	Index	Std Err
1992	96	46	0	**142**	79
1993	46	46	0	**94**	90
1994	142	94	0	**237**	123
1995	384	180	0	**564**	205
1996	140	0	0	**140**	79
1997	0	48	0	**48**	43
1998	394	336	0	**730**	212
1999	44	0	0	**44**	44
2000	242	204	0	**445**	152
2001	0	0	0	**20**	0
2002	242	206	0	**449**	195

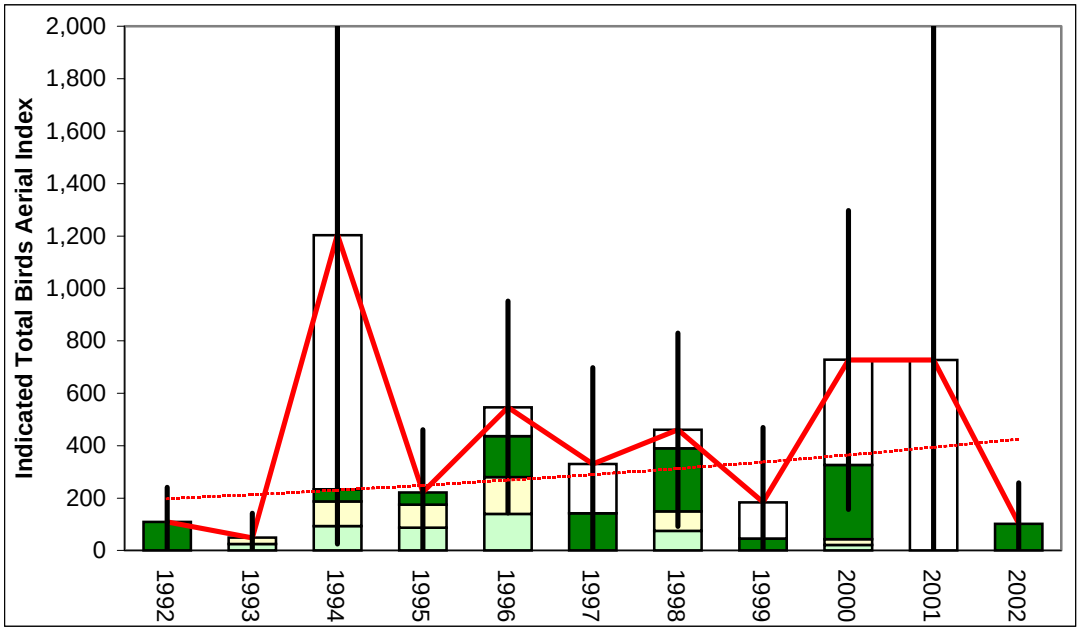
MALL

n =	11
mean =	265
slope =	-0.0181
SE slope =	0.1184
Growth Rate =	**0.982**
low 90%ci GR =	0.808
high 90%ci GR =	1.193
regression resid CV =	1.245
avg sampling err CV =	0.538

min yrs to detect 50%/10yr change:

w/ regress resid CV =	32.0
w/ sample error CV =	18.3

Figure 16. Population trend for Mallard (*Anas platyrhynchos*) observed on aerial survey transects sampling 30,755 km^2 of wetland tundra on the North Slope of Alaska. The indicated total birds population index is the sum of birds observed as singles, an equal number of unseen but indicated single birds, birds in pairs, and all birds in flocks, indicated by column divisions from bottom to top. Vertical lines indicate 95% confidence intervals based on sampling error calculated among transects. Stratification included 11 physiographic regions. Average annual growth rate is calculated by log-linear regression. Power calculations use alpha and beta set at p=0.10 and a coefficient of variation based on either regression residuals or sampling errors. The power of the survey to detect trends can be compared for each species using an estimate of the minimum number of years necessary to detect a given slope of –0.0693, a 50% decline in 10 years. To calculate slope, an index value of 50 was substituted for years with no observations.



Aerial index: Indicated total birds

year	2*sg	2*pr	flocks	Index	Std Err
1992	0	110	0	**110**	67
1993	50	0	0	**49**	48
1994	188	46	970	**1206**	602
1995	176	46	0	**223**	121
1996	280	156	111	**547**	206
1997	0	142	188	**330**	188
1998	150	240	71	**461**	188
1999	0	46	138	**185**	145
2000	44	282	402	**727**	291
2001	0	0	727	**727**	798
2002	0	102	0	**103**	79

AMWI

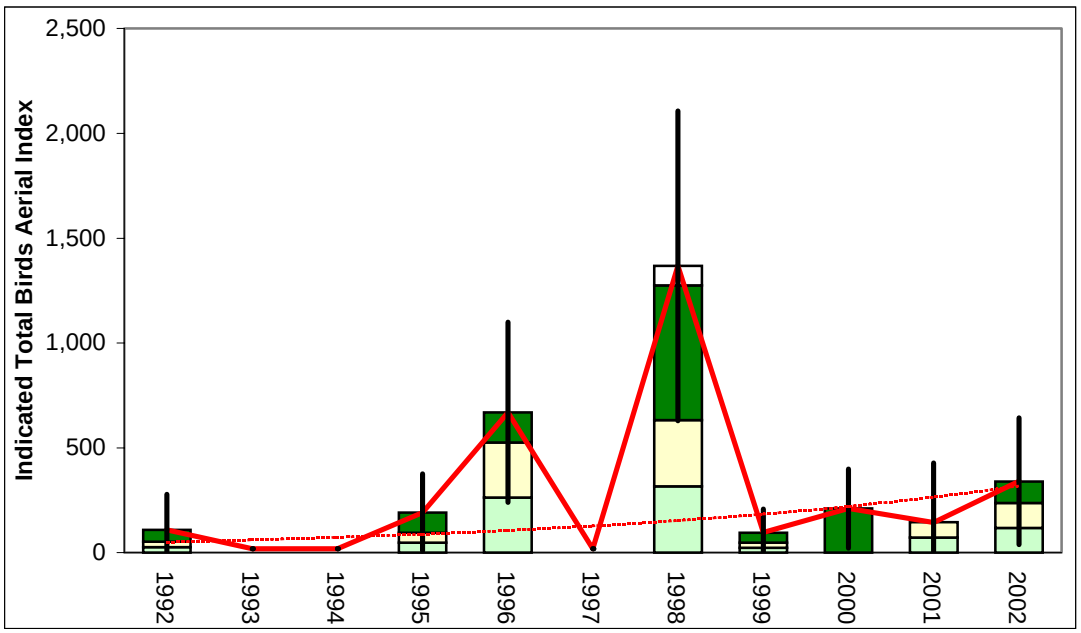
n =	11
mean =	424
slope =	0.0763
SE slope =	0.0962
Growth Rate =	**1.079**
low 90%ci GR =	0.921
high 90%ci GR =	1.264
regression resid CV =	1.010
avg sampling err CV =	0.639

min yrs to detect 50%/10yr change:

w/ regress resid CV =	27.9
w/ sample error CV =	20.5

Figure 17. Population trend for American Wigeon (*Anas americana*) observed on aerial survey transects sampling 30,755 km^2 of wetland tundra on the North Slope of Alaska. The indicated total birds population index is the sum of birds observed as singles, an equal number of unseen but indicated single birds, birds in pairs, and all birds in flocks, indicated by column divisions from bottom to top. Vertical lines indicate 95% confidence intervals based on sampling error calculated among transects. Stratification included 11 physiographic regions. Average annual growth rate is calculated by log-linear regression. Power calculations use alpha and beta set at p=0.10 and a coefficient of variation based on either regression residuals or sampling errors. The power of the survey to detect trends can be compared for each species using an estimate of the minimum number of years necessary to detect a given slope of –0.0693, a 50% decline in 10 years.

Northern Shoveler North Slope early-June survey



Aerial index: Indicated total birds

year	2*sg	2*pr	flocks	Index	Std Err
1992	54	56	0	**110**	86
1993	0	0	0	**20**	0
1994	0	0	0	**20**	0
1995	96	96	0	**192**	94
1996	526	144	0	**670**	219
1997	0	0	0	**20**	0
1998	632	642	94	**1368**	377
1999	48	48	0	**97**	57
2000	0	212	0	**211**	96
2001	146	0	0	**145**	144
2002	238	102	0	**341**	154

NSHO

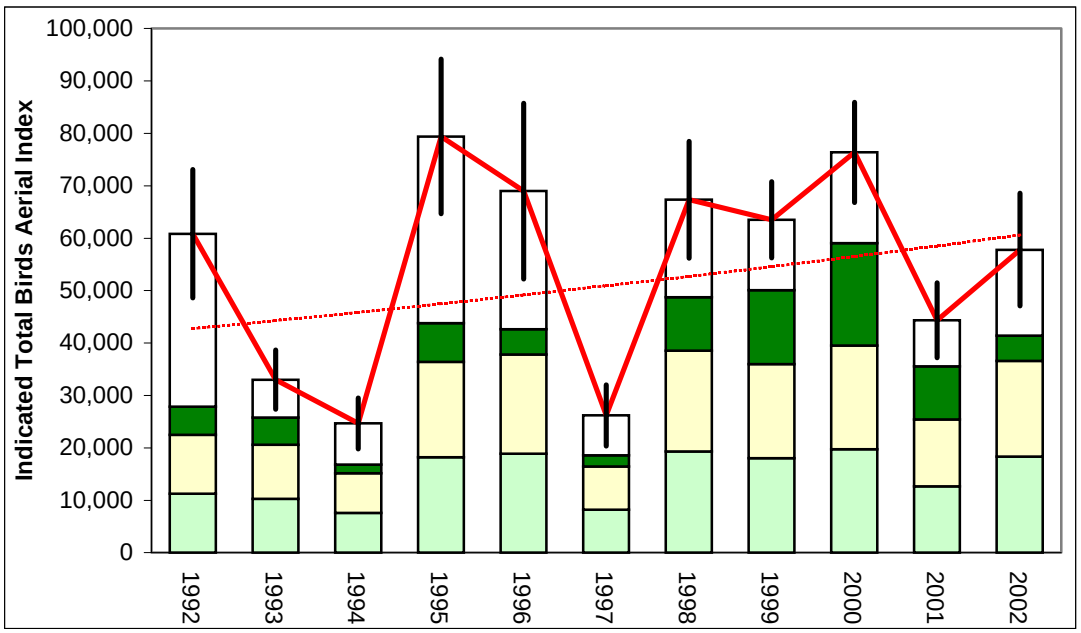
n =	11
mean =	290
slope =	0.1818
SE slope =	0.1293
Growth Rate =	**1.199**
low 90%ci GR =	0.970
high 90%ci GR =	1.484
regression resid CV =	1.360
avg sampling err CV =	0.396

min yrs to detect 50%/10yr change:

w/ regress resid CV =	34.0
w/ sample error CV =	14.9

Figure 18. Population trend for Northern Shoveler (*Anas clypeata*) observed on aerial survey transects sampling 30,755 km^2 of wetland tundra on the North Slope of Alaska. The indicated total birds population index is the sum of birds observed as singles, an equal number of unseen but indicated single birds, birds in pairs, and all birds in flocks, indicated by column divisions from bottom to top. Vertical lines indicate 95% confidence intervals based on sampling error calculated among transects. Stratification included 11 physiographic regions. Average annual growth rate is calculated by log-linear regression. Power calculations use alpha and beta set at p=0.10 and a coefficient of variation based on either regression residuals or sampling errors. The power of the survey to detect trends can be compared for each species using an estimate of the minimum number of years necessary to detect a given slope of –0.0693, a 50% decline in 10 years. To calculate slope, an index value of 50 was substituted for years with no observations.

Northern Pintail North Slope early-June survey



Aerial index: Indicated total birds

year	2*sg	2*pr	flocks	Index	Std Err
1992	22482	5390	32969	**60842**	6249
1993	20604	5164	7260	**33028**	2880
1994	15172	1624	7864	**24660**	2496
1995	36392	7392	35626	**79409**	7508
1996	37798	4840	26386	**69024**	8545
1997	16428	2138	7614	**26181**	2990
1998	38574	10168	18623	**67366**	5686
1999	36022	14060	13429	**63510**	3701
2000	39496	19586	17286	**76368**	4876
2001	25382	10174	8802	**44358**	3637
2002	36620	4766	16434	**57819**	5495

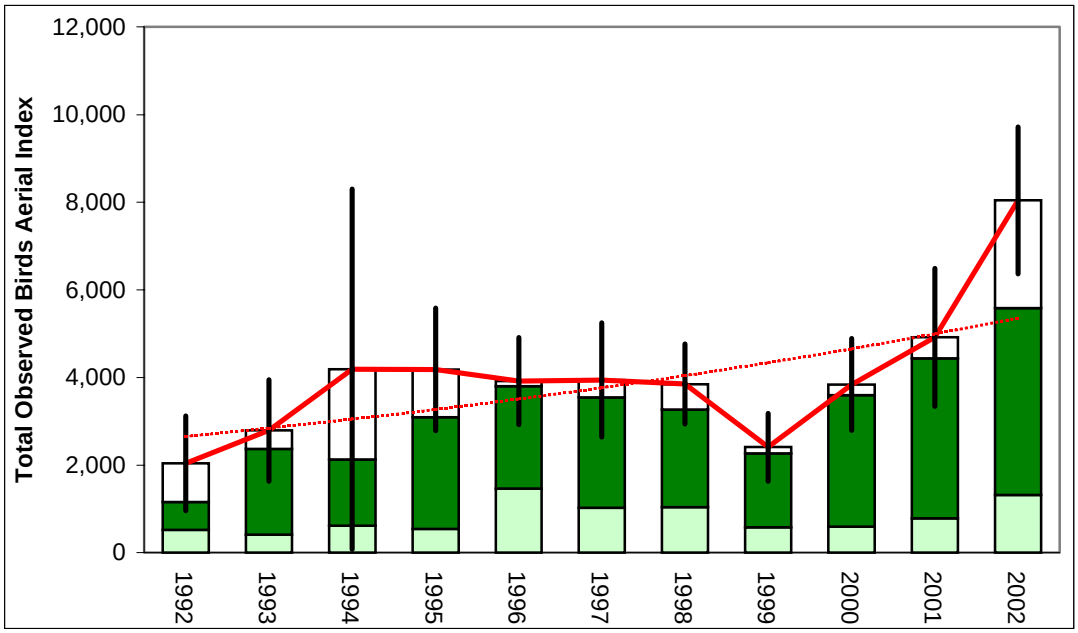
NOPI

n =	11
mean =	54779
slope =	0.0350
SE slope =	0.0411
Growth Rate =	**1.036**
low 90%ci GR =	0.968
high 90%ci GR =	1.108
regression resid CV =	0.431
avg sampling err CV =	0.092

min yrs to detect 50%/10yr change:

w/ regress resid CV =	15.8
w/ sample error CV =	5.6

Figure 19. Population trend for Northern Pintail (*Anas acuta*) observed on aerial survey transects sampling 30,755 km^2 of wetland tundra on the North Slope of Alaska. The indicated total birds population index is the sum of birds observed as singles, an equal number of unseen but indicated single birds, birds in pairs, and all birds in flocks, indicated by column divisions from bottom to top. Vertical lines indicate 95% confidence intervals based on sampling error calculated among transects. Stratification included 11 physiographic regions. Average annual growth rate is calculated by log-linear regression. Power calculations use alpha and beta set at p=0.10 and a coefficient of variation based on either regression residuals or sampling errors. The power of the survey to detect trends can be compared for each species using an estimate of the minimum number of years necessary to detect a given slope of –0.0693, a 50% decline in 10 years.



Aerial index: Total birds observed

year	sg	2*pr	flocks	Index	Std Err
1992	525	630	884	**2039**	549
1993	417	1954	420	**2791**	590
1994	617	1510	2065	**4192**	2097
1995	547	2540	1096	**4182**	713
1996	1462	2340	116	**3917**	508
1997	1029	2520	392	**3940**	665
1998	1039	2230	581	**3851**	466
1999	581	1684	144	**2410**	396
2000	601	2998	240	**3838**	535
2001	787	3652	479	**4918**	803
2002	1319	4260	2467	**8046**	855

SCAU

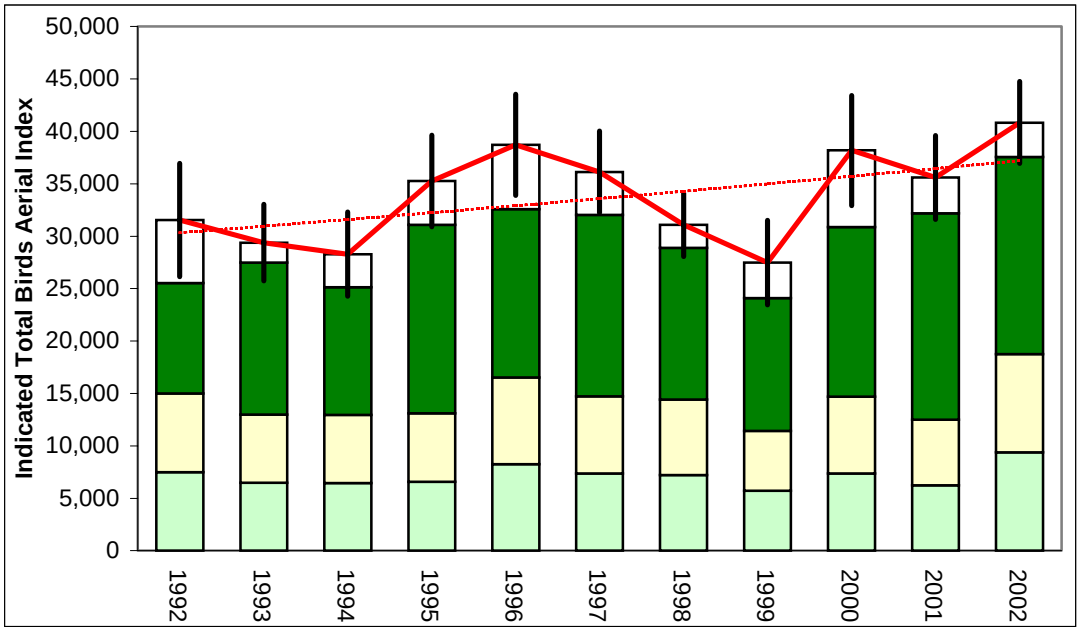
n =	11
mean =	4011
slope =	0.0704
SE slope =	0.0283
Growth Rate =	**1.073**
low 90%ci GR =	1.024
high 90%ci GR =	1.124
regression resid CV =	0.297
avg sampling err CV =	0.195

min yrs to detect 50%/10yr change:

w/ regress resid CV =	12.3
w/ sample error CV =	9.3

Figure 20. Population trend for Greater Scaup (*Aythya marila*) observed on aerial survey transects sampling 30,755 km^2 of wetland tundra on the North Slope of Alaska. The total birds observed population index is the sum of birds observed as singles, birds in pairs, and all birds in flocks, indicated by column divisions from bottom to top. Vertical lines indicate 95% confidence intervals based on sampling error calculated among transects. Stratification included 11 physiographic regions. Average annual growth rate is calculated by log-linear regression. Power calculations use alpha and beta set at p=0.10 and a coefficient of variation based on either regression residuals or sampling errors. The power of the survey to detect trends can be compared for each species using an estimate of the minimum number of years necessary to detect a given slope of –0.0693, a 50% decline in 10 years.

Long-tailed Duck North Slope early-June survey



Aerial index: Indicated total birds

year	2*sg	2*pr	flocks	Index	Std Err
1992	15012	10520	6020	**31552**	2752
1993	12958	14534	1886	**29380**	1862
1994	12934	12202	3159	**28295**	2054
1995	13138	17966	4162	**35265**	2230
1996	16522	16064	6136	**38722**	2467
1997	14742	17304	4076	**36122**	1997
1998	14422	14474	2192	**31087**	1536
1999	11428	12652	3406	**27485**	2063
2000	14720	16168	7291	**38179**	2677
2001	12496	19688	3425	**35609**	2044
2002	18748	18804	3293	**40846**	1992

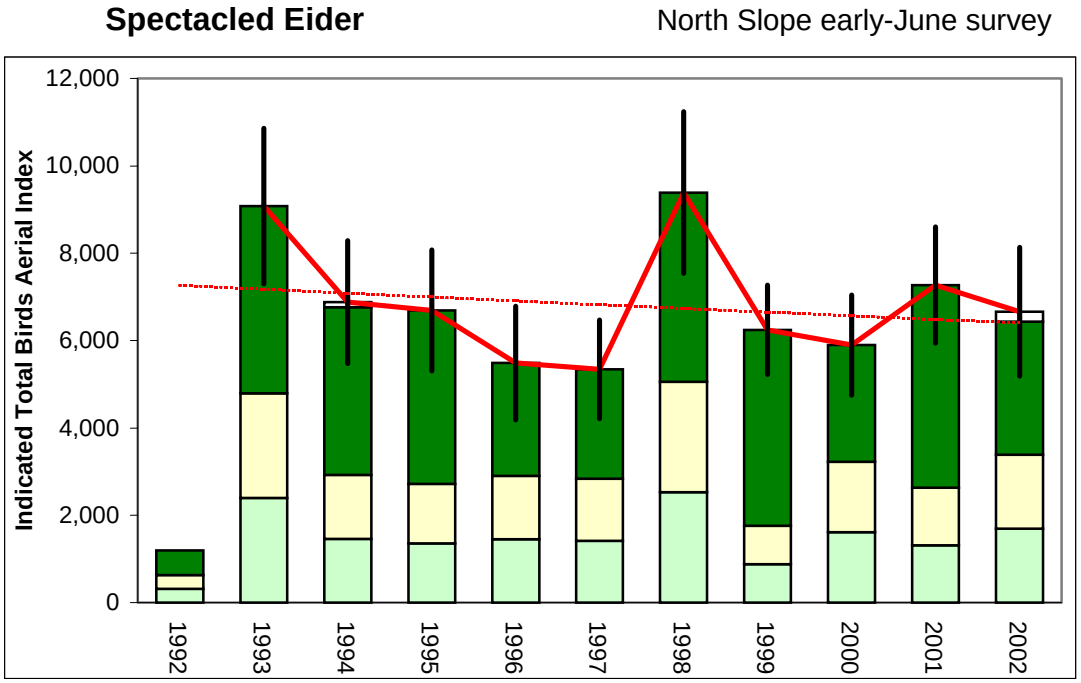
OLDS

n =	11
mean =	33867
slope =	0.0204
SE slope =	0.0118
Growth Rate =	**1.021**
low 90%ci GR =	1.001
high 90%ci GR =	1.041
regression resid CV =	0.124
avg sampling err CV =	0.064

min yrs to detect 50%/10yr change:

w/ regress resid CV =	6.9
w/ sample error CV =	4.4

Figure 21. Population trend for Long-tailed Duck (*Clangula hyemalis*) observed on aerial survey transects sampling 30,755 km^2 of wetland tundra on the North Slope of Alaska. The indicated total birds population index is the sum of birds observed as singles, an equal number of unseen but indicated single birds, birds in pairs, and all birds in flocks, indicated by column divisions from bottom to top. Vertical lines indicate 95% confidence intervals based on sampling error calculated among transects. Stratification included 11 physiographic regions. Average annual growth rate is calculated by log-linear regression. Power calculations use alpha and beta set at p=0.10 and a coefficient of variation based on either regression residuals or sampling errors. The power of the survey to detect trends can be compared for each species using an estimate of the minimum number of years necessary to detect a given slope of –0.0693, a 50% decline in 10 years.



Aerial index: Indicated total birds

year	2*sg	2*pr	flocks	Index	Std Err
1992					
1993	4796	4284	0	**9079**	909
1994	2920	3848	113	**6882**	717
1995	2722	3970	0	**6693**	707
1996	2902	2588	0	**5489**	663
1997	2838	2506	0	**5345**	577
1998	5060	4332	0	**9392**	944
1999	1764	4482	0	**6247**	521
2000	3228	2672	0	**5900**	585
2001	2634	4636	0	**7270**	679
2002	3390	3048	224	**6662**	752

SPEI

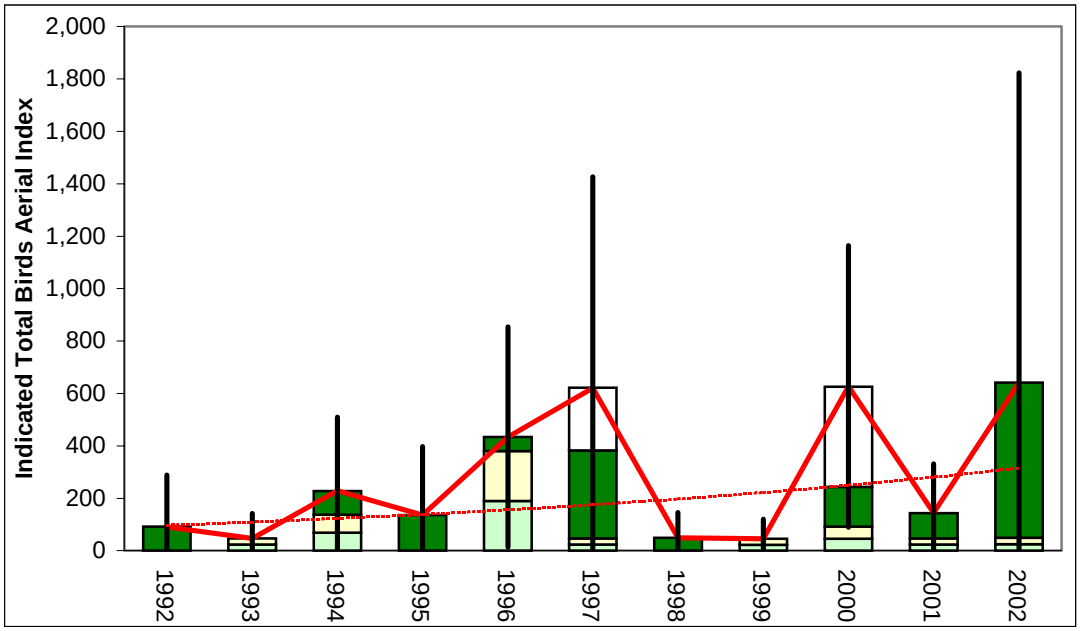
n =	10
mean =	6896
slope =	-0.0126
SE slope =	0.0217
Growth Rate =	**0.987**
low 90%ci GR =	0.953
high 90%ci GR =	1.023
regression resid CV =	0.197
avg sampling err CV =	0.103

min yrs to detect 50%/10yr change:

w/ regress resid CV =	9.4
w/ sample error CV =	6.1

Figure 22. Population trend for Spectacled Eider (*Somateria fischeri*) observed on aerial survey transects sampling 30,755 km^2 of wetland tundra on the North Slope of Alaska. The indicated total birds population index is the sum of birds observed as singles, an equal number of unseen but indicated single birds, birds in pairs, and all birds in flocks, indicated by column divisions from bottom to top. Vertical lines indicate 95% confidence intervals based on sampling error calculated among transects. Stratification included 11 physiographic regions. Average annual growth rate is calculated by log-linear regression. Power calculations use alpha and beta set at p=0.10 and a coefficient of variation based on either regression residuals or sampling errors. The power of the survey to detect trends can be compared for each species using an estimate of the minimum number of years necessary to detect a given slope of –0.0693, a 50% decline in 10 years. A low index of 1,202 in 1992 was excluded from trend calculation because the survey was flown too late in June.

Common Eider North Slope early-June survey



Aerial index: Indicated total birds

year	2*sg	2*pr	flocks	Index	Std Err
1992	0	92	0	**91**	101
1993	48	0	0	**48**	48
1994	138	90	0	**229**	143
1995	0	136	0	**136**	133
1996	380	54	0	**434**	214
1997	48	334	240	**621**	411
1998	0	50	0	**50**	49
1999	46	0	0	**46**	38
2000	92	152	382	**627**	274
2001	48	96	0	**145**	95
2002	50	592	0	**642**	603

COEI

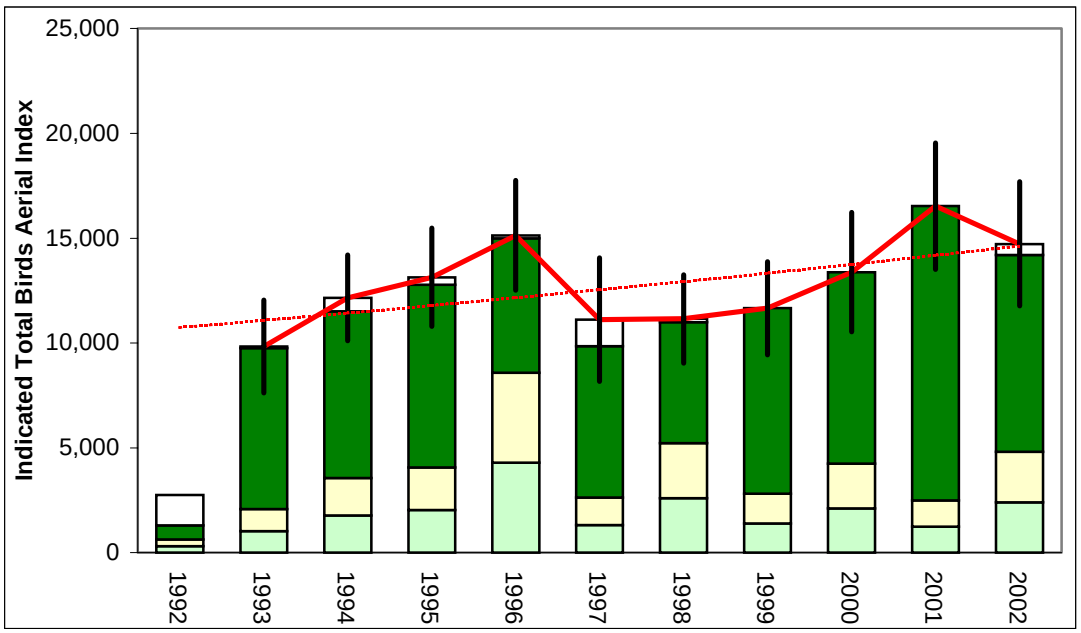
n =	11
mean =	279
slope =	0.1171
SE slope =	0.0998
Growth Rate =	**1.124**
low 90%ci GR =	0.954
high 90%ci GR =	1.325
regression resid CV =	1.049
avg sampling err CV =	0.791

min yrs to detect 50%/10yr change:

w/ regress resid CV =	28.6
w/ sample error CV =	23.7

Figure 23. Population trend for Common Eider (*Somateria mollissima*) observed on aerial survey transects sampling 30,755 km^2 of wetland tundra on the North Slope of Alaska. The indicated total birds population index is the sum of birds observed as singles, an equal number of unseen but indicated single birds, birds in pairs, and all birds in flocks, indicated by column divisions from bottom to top. Vertical lines indicate 95% confidence intervals based on sampling error calculated among transects. Stratification included 11 physiographic regions. Average annual growth rate is calculated by log-linear regression. Power calculations use alpha and beta set at p=0.10 and a coefficient of variation based on either regression residuals or sampling errors. The power of the survey to detect trends can be compared for each species using an estimate of the minimum number of years necessary to detect a given slope of –0.0693, a 50% decline in 10 years.

King Eider North Slope early-June survey



Aerial index: Indicated total birds

year	2*sg	2*pr	flocks	Index	Std Err
1992					
1993	2084	7672	77	**9832**	1125
1994	3564	7950	638	**12152**	1044
1995	4066	8704	371	**13141**	1196
1996	8590	6404	144	**15137**	1335
1997	2640	7208	1273	**11120**	1503
1998	5220	5770	167	**11156**	1074
1999	2814	8846	0	**11659**	1134
2000	4242	9136	0	**13378**	1452
2001	2502	14030	0	**16533**	1537
2002	4804	9398	527	**14730**	1512

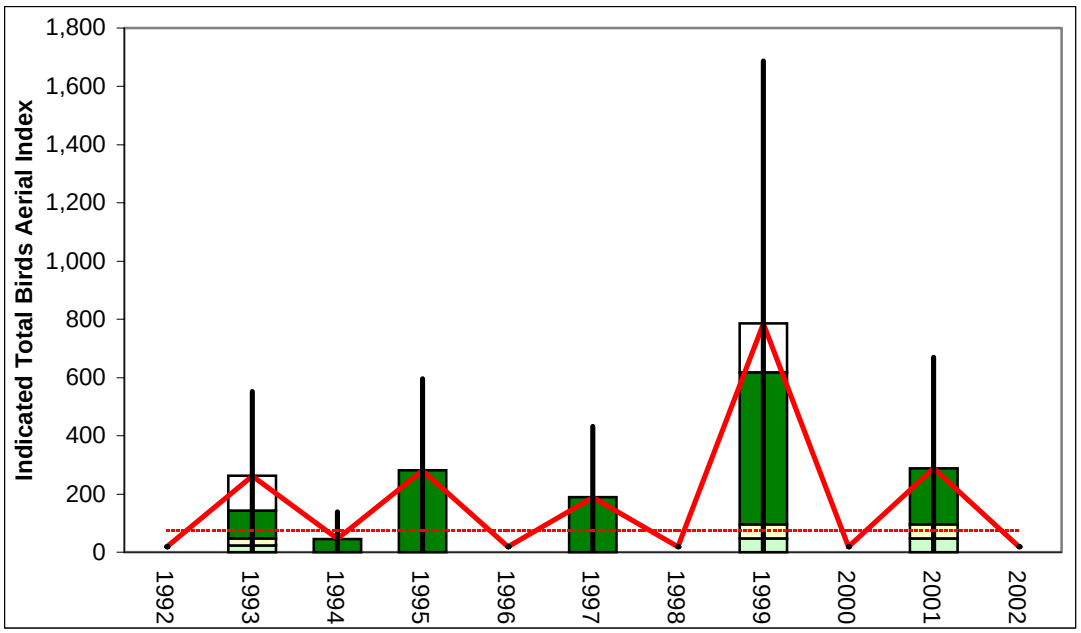
KIEI

n =	10
mean =	12884
slope =	0.0309
SE slope =	0.0154
Growth Rate =	**1.031**
low 90%ci GR =	1.006
high 90%ci GR =	1.058
regression resid CV =	0.140
avg sampling err CV =	0.101

min yrs to detect 50%/10yr change:

w/ regress resid CV =	7.5
w/ sample error CV =	6.0

Figure 24. Population trend for King Eider (*Somateria spectabilis*) observed on aerial survey transects sampling 30,755 km^2 of wetland tundra on the North Slope of Alaska. The indicated total birds population index is the sum of birds observed as singles, an equal number of unseen but indicated single birds, birds in pairs, and all birds in flocks, indicated by column divisions from bottom to top. Vertical lines indicate 95% confidence intervals based on sampling error calculated among transects. Stratification included 11 physiographic regions. Average annual growth rate is calculated by log-linear regression. Power calculations use alpha and beta set at p=0.10 and a coefficient of variation based on either regression residuals or sampling errors. The power of the survey to detect trends can be compared for each species using an estimate of the minimum number of years necessary to detect a given slope of –0.0693, a 50% decline in 10 years. A low index of 2,754 in 1992 was excluded from trend calculation because the survey was flown too late in June.



Aerial index: Indicated total birds

year	2*sg	2*pr	flocks	Index	Std Err
1992	0	0	0	**20**	0
1993	48	96	119	**262**	148
1994	0	46	0	**47**	47
1995	0	282	0	**281**	161
1996	0	0	0	**20**	0
1997	0	190	0	**189**	124
1998	0	0	0	**20**	0
1999	96	522	168	**785**	460
2000	0	0	0	**20**	0
2001	96	192	0	**288**	195
2002	0	0	0	**20**	0

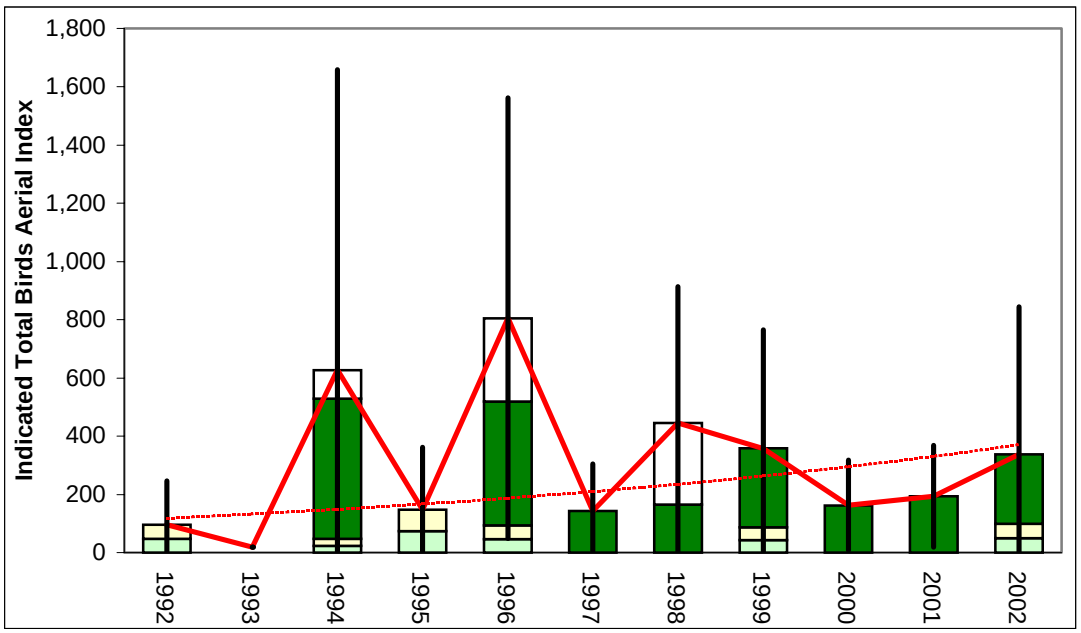
STEI

n =	11
mean =	177
slope =	-0.0012
SE slope =	0.1437
Growth Rate =	**0.999**
low 90%ci GR =	0.789
high 90%ci GR =	1.265
regression resid CV =	1.513
avg sampling err CV =	0.369

min yrs to detect 50%/10yr change:

w/ regress resid CV =	36.4
w/ sample error CV =	14.2

Figure 25. Population trend for Steller's Eider (*Polysticta stelleri*) observed on aerial survey transects sampling 30,755 km^2 of wetland tundra on the North Slope of Alaska. The indicated total birds population index is the sum of birds observed as singles, an equal number of unseen but indicated single birds, birds in pairs, and all birds in flocks, indicated by column divisions from bottom to top. Vertical lines indicate 95% confidence intervals based on sampling error calculated among transects. Stratification included 11 physiographic regions. Average annual growth rate is calculated by log-linear regression. Power calculations use alpha and beta set at p=0.10 and a coefficient of variation based on either regression residuals or sampling errors. The power of the survey to detect trends can be compared for each species using an estimate of the minimum number of years necessary to detect a given slope of –0.0693, a 50% decline in 10 years. To calculate slope, an index value of 50 was substituted for years with no observations.



Aerial index: Indicated total birds

year	2*sg	2*pr	flocks	Index	Std Err
1992	96	0	0	**96**	77
1993	0	0	0	**20**	0
1994	48	482	97	**628**	526
1995	148	0	0	**148**	109
1996	94	426	285	**806**	386
1997	0	144	0	**144**	82
1998	0	166	279	**445**	239
1999	88	270	0	**357**	208
2000	0	162	0	**163**	79
2001	0	194	0	**194**	89
2002	100	238	0	**338**	258

WWSC

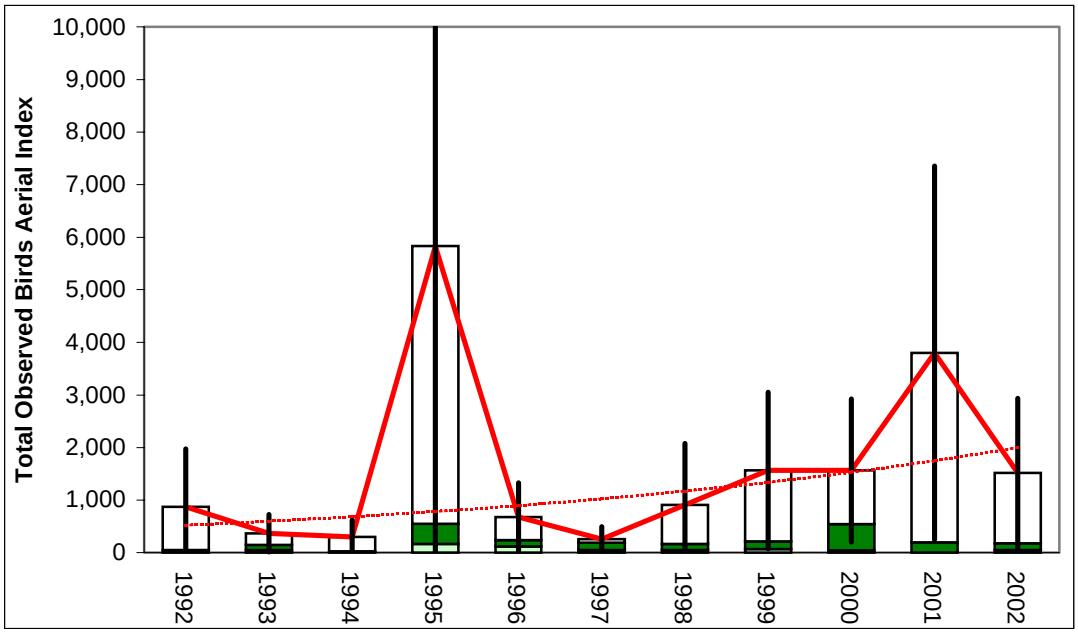
n =	11
mean =	304
slope =	0.1137
SE slope =	0.0961
Growth Rate =	**1.120**
low 90%ci GR =	0.957
high 90%ci GR =	1.312
regression resid CV =	1.009
avg sampling err CV =	0.568

min yrs to detect 50%/10yr change:

w/ regress resid CV =	27.8
w/ sample error CV =	19.0

Figure 26. Population trend for White-winged Scoters (*Melanitta fusca*) observed on aerial survey transects sampling 30,755 km^2 of wetland tundra on the North Slope of Alaska. The indicated total birds population index is the sum of birds observed as singles, an equal number of unseen but indicated single birds, birds in pairs, and all birds in flocks, indicated by column divisions from bottom to top. Vertical lines indicate 95% confidence intervals based on sampling error calculated among transects. Stratification included 11 physiographic regions. Average annual growth rate is calculated by log-linear regression. Power calculations use alpha and beta set at p=0.10 and a coefficient of variation based on either regression residuals or sampling errors. The power of the survey to detect trends can be compared for each species using an estimate of the minimum number of years necessary to detect a given slope of –0.0693, a 50% decline in 10 years. To calculate slope, an index value of 50 was substituted for years with no observations.

Snow Goose North Slope early-June survey



Aerial index: Total birds observed

year	sg	2*pr	flocks	Index	Std Err
1992	51	0	823	**874**	561
1993	51	98	219	**368**	183
1994	23	0	282	**305**	163
1995	171	380	5281	**5831**	5281
1996	119	124	437	**680**	330
1997	47	146	71	**264**	119
1998	48	120	743	**910**	595
1999	73	144	1350	**1568**	759
2000	45	504	1018	**1567**	695
2001	0	200	3601	**3801**	1813
2002	49	134	1335	**1518**	724

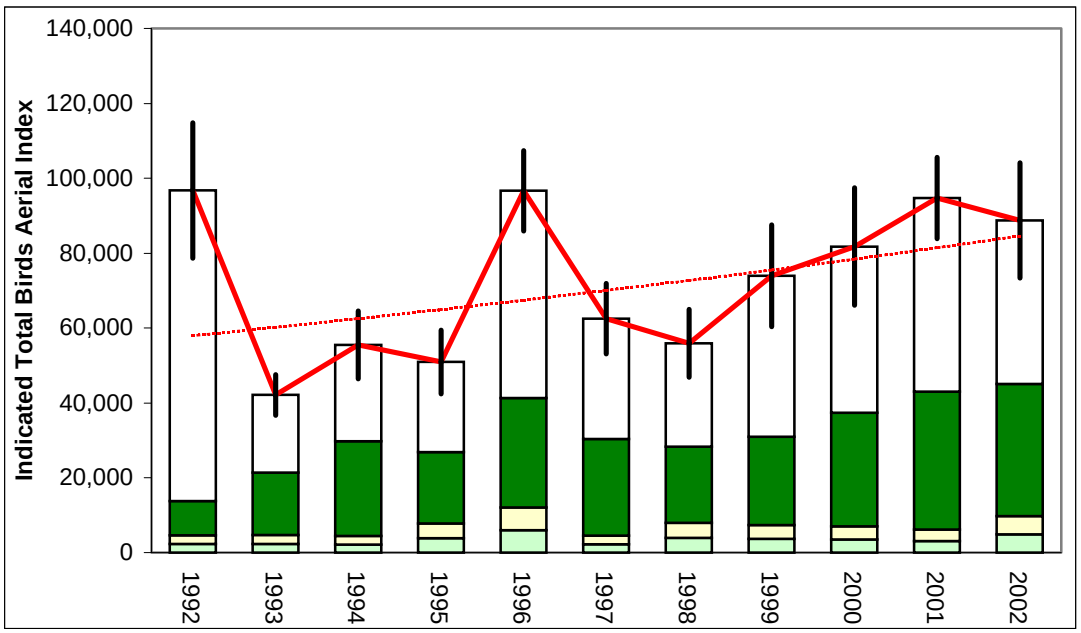
SNGO

n =	11
mean =	1608
slope =	0.1334
SE slope =	0.0891
Growth Rate =	**1.143**
low 90%ci GR =	0.987
high 90%ci GR =	1.323
regression resid CV =	0.936
avg sampling err CV =	0.550

min yrs to detect 50%/10yr change:

w/ regress resid CV =	26.5
w/ sample error CV =	18.6

Figure 27. Population trend for Snow Geese (*Chen caerulescens*) observed on aerial survey transects sampling 30,755 km^2 of wetland tundra on the North Slope of Alaska. The total birds population index is the sum of birds observed as singles, birds in pairs, and all birds in flocks, indicated by column divisions from bottom to top. Vertical lines indicate 95% confidence intervals based on sampling error calculated among transects. Stratification included 11 physiographic regions. Average annual growth rate is calculated by log-linear regression. Power calculations use alpha and beta set at p=0.10 and a coefficient of variation based on either regression residuals or sampling errors. The power of the survey to detect trends can be compared for each species using an estimate of the minimum number of years necessary to detect a given slope of –0.0693, a 50% decline in 10 years.



Aerial index: Indicated total birds

year	2*sg	2*pr	flocks	Index	Std Err
1992	4724	9112	82955	**96790**	9227
1993	4792	16634	20741	**42168**	2753
1994	4518	25216	25811	**55543**	4612
1995	7880	18942	24149	**50970**	4320
1996	12120	29232	55314	**96667**	5466
1997	4642	25702	32181	**62525**	4782
1998	8028	20240	27685	**55952**	4612
1999	7424	23526	43039	**73991**	6933
2000	7082	30374	44308	**81765**	8021
2001	6266	36806	51653	**94724**	5543
2002	9822	35276	43662	**88762**	7830

WFGO

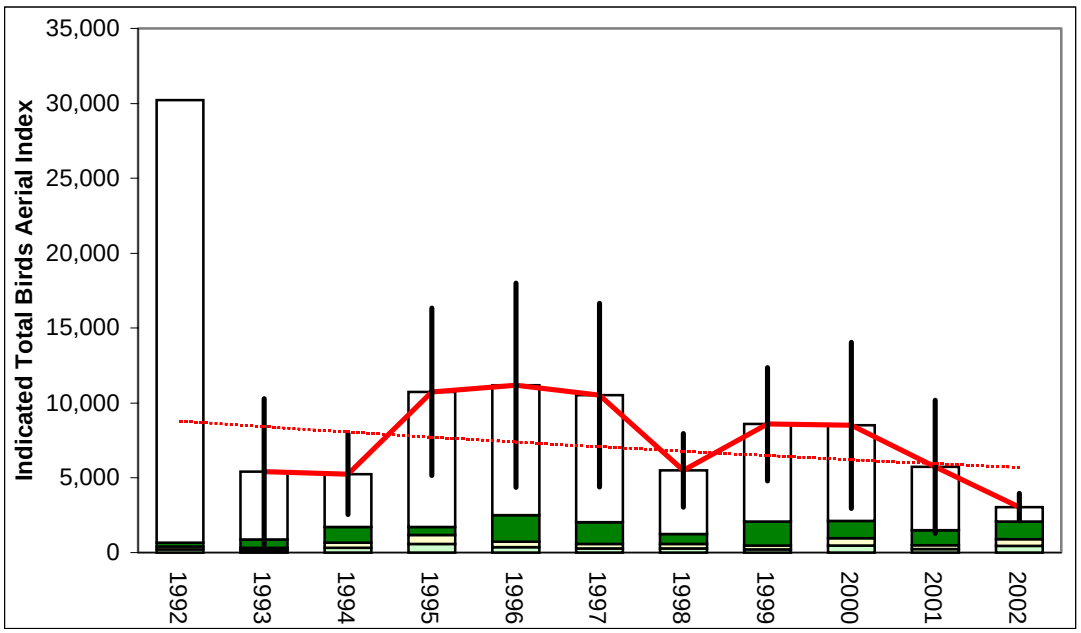
n =	11
mean =	72714
slope =	0.0378
SE slope =	0.0266
Growth Rate =	**1.039**
low 90%ci GR =	0.994
high 90%ci GR =	1.085
regression resid CV =	0.279
avg sampling err CV =	0.080

min yrs to detect 50%/10yr change:

w/ regress resid CV =	11.8
w/ sample error CV =	5.2

Figure 28. Population trend for Greater White-fronted Geese (*Anser albifrons frontalis*) observed on aerial survey transects sampling 30,755 km^2 of wetland tundra on the North Slope of Alaska. The indicated total birds population index is the sum of birds observed as singles, an equal number of unseen but indicated single birds, birds in pairs, and all birds in flocks, indicated by column divisions from bottom to top. Vertical lines indicate 95% confidence intervals based on sampling error calculated among transects. Stratification included 11 physiographic regions. Average annual growth rate is calculated by log-linear regression. Power calculations use alpha and beta set at p=0.10 and a coefficient of variation based on either regression residuals or sampling errors. The power of the survey to detect trends can be compared for each species using an estimate of the minimum number of years necessary to detect a given slope of –0.0693, a 50% decline in 10 years.

Canada Goose North Slope early-June survey



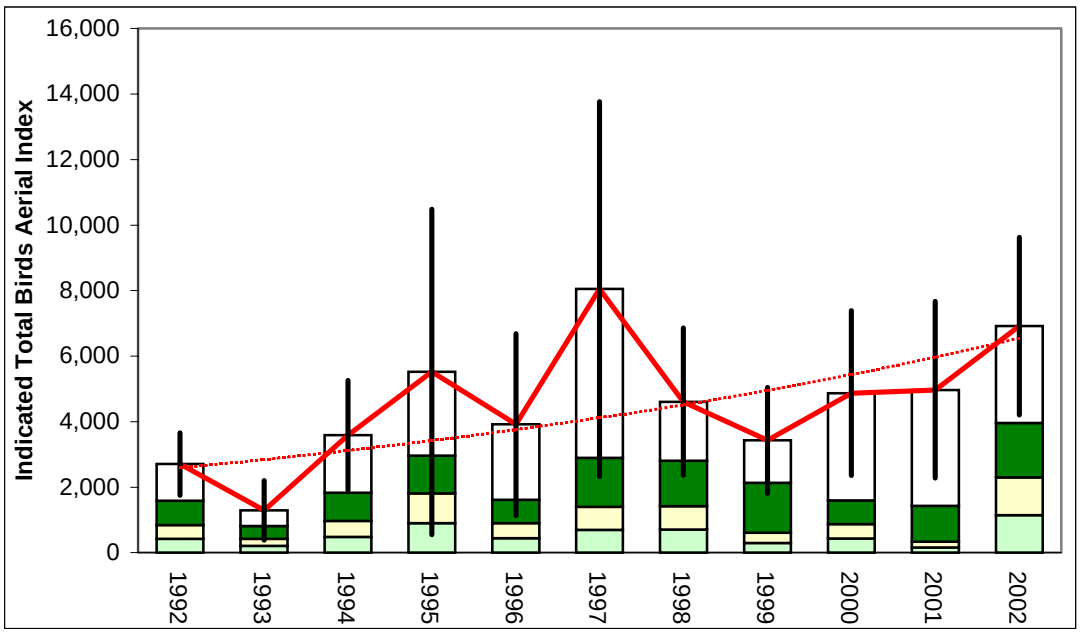
Aerial index: Indicated total birds

year	2*sg	2*pr	flocks	Index	Std Err
1992					
1993	348	540	4524	**5413**	2496
1994	674	1044	3529	**5246**	1369
1995	1186	538	9018	**10742**	2853
1996	750	1764	8670	**11183**	3473
1997	588	1464	8470	**10523**	3124
1998	592	670	4234	**5496**	1254
1999	486	1606	6488	**8581**	1928
2000	976	1158	6366	**8502**	2829
2001	520	1004	4219	**5743**	2267
2002	924	1174	945	**3045**	467

CAGO

n =	10
mean =	7447
slope =	-0.0434
SE slope =	0.0466
Growth Rate =	**0.958**
low 90%ci GR =	0.887
high 90%ci GR =	1.034
regression resid CV =	0.423
avg sampling err CV =	0.293
min yrs to detect 50%/10yr change:	
w/ regress resid CV =	15.6
w/ sample error CV =	12.2

Figure 29. Population trend for Canada Geese (*Branta canadensis*) observed on aerial survey transects sampling 30,755 km^2 of wetland tundra on the North Slope of Alaska. The indicated total birds population index is the sum of birds observed as singles, an equal number of unseen but indicated single birds, birds in pairs, and all birds in flocks, indicated by column divisions from bottom to top. Vertical lines indicate 95% confidence intervals based on sampling error calculated among transects. Stratification included 11 physiographic regions. Average annual growth rate is calculated by log-linear regression. The 1992 data, resulting from a survey flown about 10 days later than other years, was excluded from trend calculations. Power calculations use alpha and beta set at p=0.10 and a coefficient of variation based on either regression residuals or sampling errors. The power of the survey to detect trends can be compared for each species using an estimate of the minimum number of years necessary to detect a given slope of –0.0693, a 50% decline in 10 years.



Aerial index: Indicated total birds

year	2*sg	2*pr	flocks	Index	Std Err
1992	848	738	1121	**2707**	484
1993	430	388	476	**1294**	463
1994	972	858	1751	**3581**	858
1995	1808	1154	2560	**5522**	2533
1996	904	710	2300	**3914**	1414
1997	1402	1494	5151	**8047**	2919
1998	1420	1384	1808	**4611**	1146
1999	610	1520	1302	**3432**	825
2000	876	718	3281	**4873**	1283
2001	338	1098	3535	**4972**	1374
2002	2296	1658	2964	**6919**	1381

BRAN

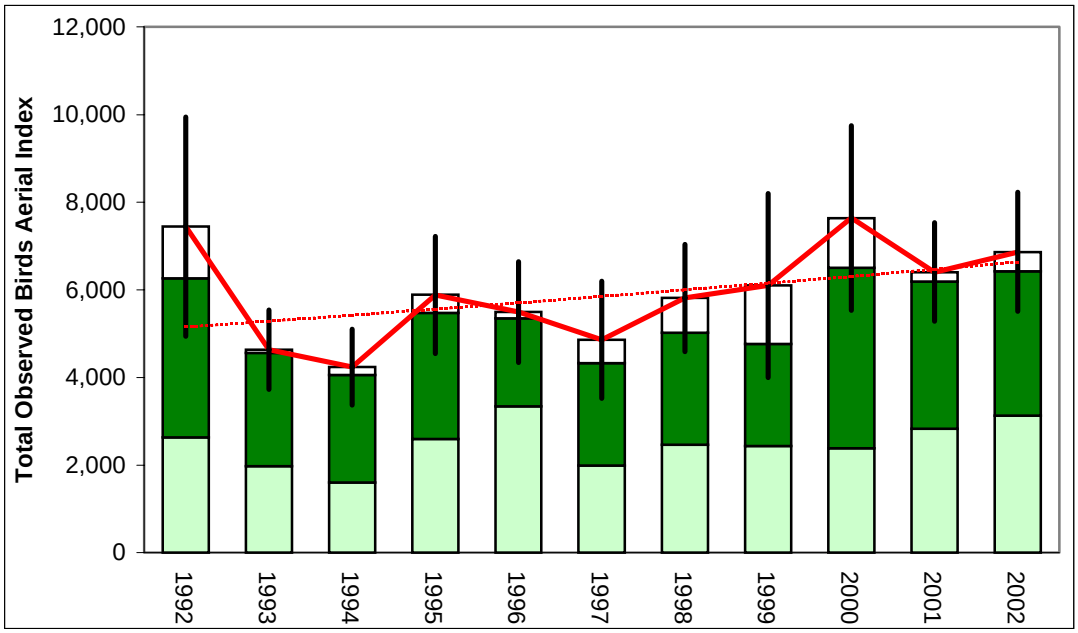
n =	11
mean =	4534
slope =	0.0928
SE slope =	0.0390
Growth Rate =	**1.097**
low 90%ci GR =	1.029
high 90%ci GR =	1.170
regression resid CV =	0.409
avg sampling err CV =	0.290

min yrs to detect 50%/10yr change:

w/ regress resid CV =	15.3
w/ sample error CV =	12.1

Figure 30. Population trend for Pacific Black Brant (*Branta bernicla nigricans*) observed on aerial survey transects sampling 30,755 km^2 of wetland tundra on the North Slope of Alaska. The indicated total birds population index is the sum of birds observed as singles, an equal number of unseen but indicated single birds, birds in pairs, and all birds in flocks, indicated by column divisions from bottom to top. Vertical lines indicate 95% confidence intervals based on sampling error calculated among transects. Stratification included 11 physiographic regions. Average annual growth rate is calculated by log-linear regression. Power calculations use alpha and beta set at p=0.10 and a coefficient of variation based on either regression residuals or sampling errors. The power of the survey to detect trends can be compared for each species using an estimate of the minimum number of years necessary to detect a given slope of –0.0693, a 50% decline in 10 years.

Tundra Swan North Slope early-June survey



Aerial index: Total birds observed

year	sg	2*pr	flocks	Index	Std Err
1992	2633	3636	1174	**7444**	1278
1993	1973	2588	73	**4633**	462
1994	1606	2452	179	**4237**	442
1995	2595	2874	415	**5883**	681
1996	3344	2006	142	**5493**	588
1997	1989	2342	526	**4858**	681
1998	2461	2562	793	**5815**	624
1999	2437	2330	1330	**6097**	1071
2000	2379	4130	1130	**7640**	1075
2001	2828	3358	220	**6406**	575
2002	3124	3300	441	**6865**	693

TUSW

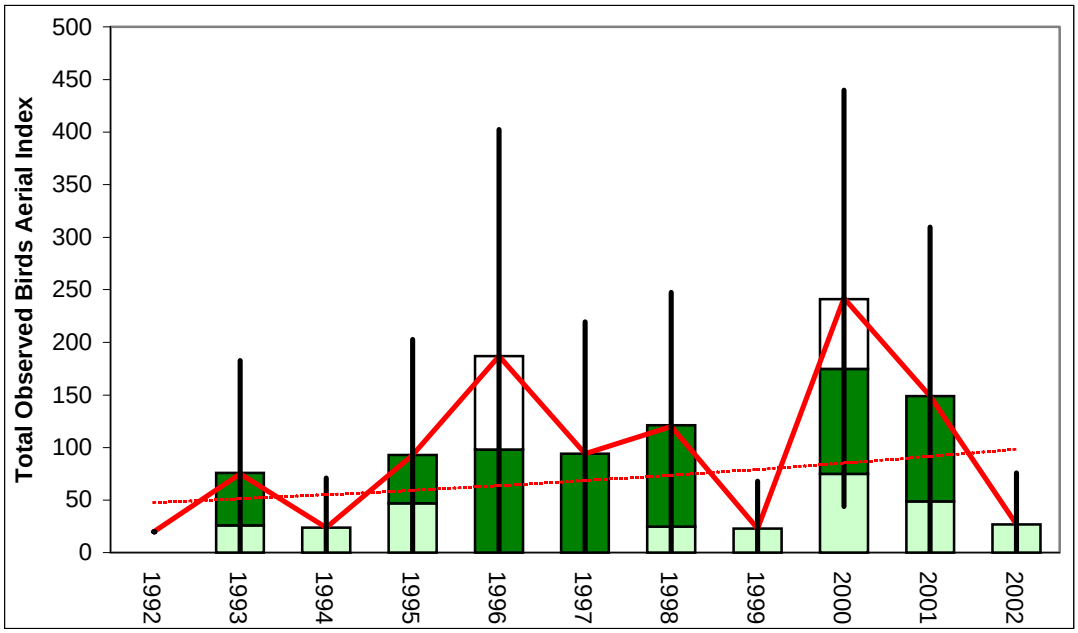
n =	11
mean =	5943
slope =	0.0253
SE slope =	0.0172
Growth Rate =	**1.026**
low 90%ci GR =	0.997
high 90%ci GR =	1.055
regression resid CV =	0.180
avg sampling err CV =	0.123

min yrs to detect 50%/10yr change:

w/ regress resid CV =	8.8
w/ sample error CV =	6.9

Figure 31. Population trend for Tundra Swans (*Cygnus columbianus*) observed on aerial survey transects sampling 30,755 km^2 of wetland tundra on the North Slope of Alaska. The total birds observed population index is the sum of birds observed as singles, birds in pairs, and all birds in flocks, indicated by column divisions from bottom to top. Vertical lines indicate 95% confidence intervals based on sampling error calculated among transects. Stratification included 11 physiographic regions. Average annual growth rate is calculated by log-linear regression. Power calculations use alpha and beta set at p=0.10 and a coefficient of variation based on either regression residuals or sampling errors. The power of the survey to detect trends can be compared for each species using an estimate of the minimum number of years necessary to detect a given slope of –0.0693, a 50% decline in 10 years.

Sandhill Crane North Slope early-June survey



Aerial index: Total birds observed

year	sg	2*pr	flocks	Index	Std Err
1992	0	0	0	**20**	0
1993	26	50	0	**75**	55
1994	24	0	0	**24**	24
1995	47	46	0	**93**	56
1996	0	98	89	**187**	110
1997	0	94	0	**94**	64
1998	25	96	0	**120**	65
1999	23	0	0	**23**	23
2000	75	100	66	**242**	101
2001	49	100	0	**149**	82
2002	27	0	0	**27**	25

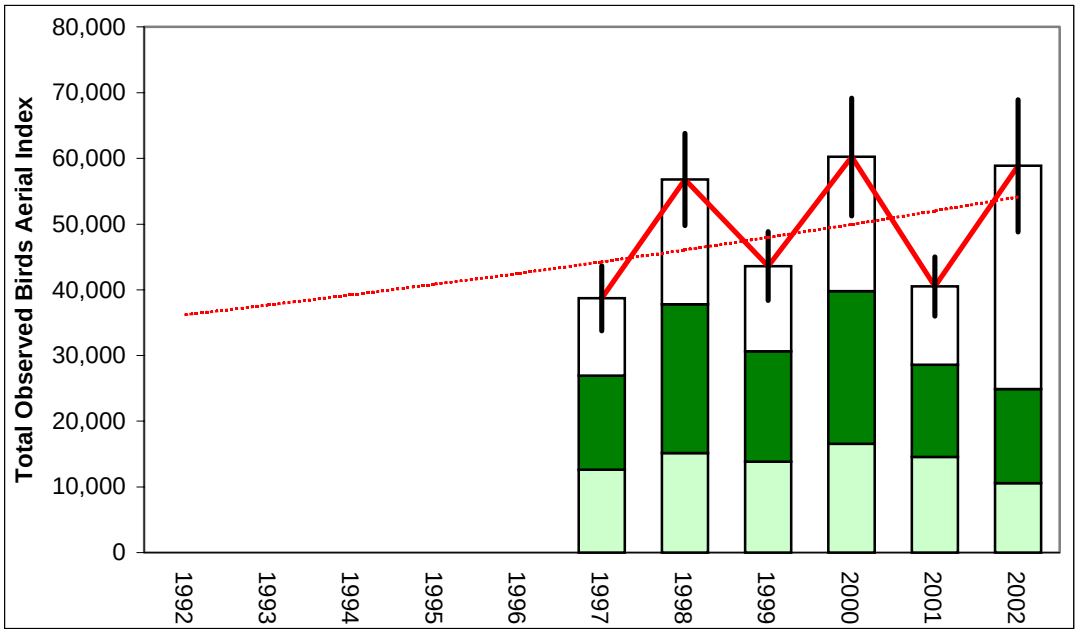
SACR

n =	11
mean =	96
slope =	0.0722
SE slope =	0.0889
Growth Rate =	**1.075**
low 90%ci GR =	0.929
high 90%ci GR =	1.244
regression resid CV =	0.934
avg sampling err CV =	0.640

min yrs to detect 50%/10yr change:

w/ regress resid CV =	26.4
w/ sample error CV =	20.6

Figure 32. Population trend for Sandhill Cranes (*Grus canadensis*) observed on aerial survey transects sampling 30,755 km^2 of wetland tundra on the North Slope of Alaska. The total birds observed population index is the sum of birds observed as singles, birds in pairs, and all birds in flocks, indicated by column divisions from bottom to top. Vertical lines indicate 95% confidence intervals based on sampling error calculated among transects. Stratification included 11 physiographic regions. Average annual growth rate is calculated by log-linear regression. Power calculations use alpha and beta set at p=0.10 and a coefficient of variation based on either regression residuals or sampling errors. The power of the survey to detect trends can be compared for each species using an estimate of the minimum number of years necessary to detect a given slope of –0.0693, a 50% decline in 10 years. To calculate slope, an index value of 50 was substituted for years with no observations.



Aerial index: Total birds observed

year	sg	2*pr	flocks	Index	Std Err
1992					
1993					
1994					
1995					
1996					
1997	12642	14292	11771	**38705**	2524
1998	15166	22638	18990	**56794**	3578
1999	13822	16840	12950	**43612**	2681
2000	16565	23238	20411	**60213**	4568
2001	14565	14024	11935	**40523**	2301
2002	10568	14330	33989	**58887**	5129

USSB

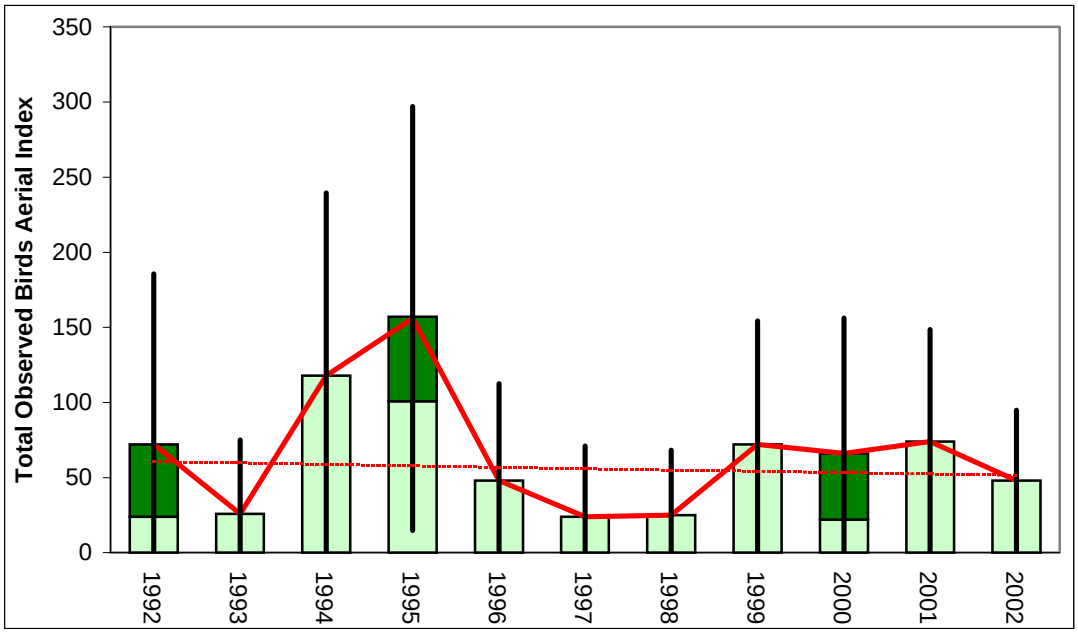
n =	6
mean =	49789
slope =	0.0402
SE slope =	0.0500
Growth Rate =	**1.041**
low 90%ci GR =	0.959
high 90%ci GR =	1.130
regression resid CV =	0.209
avg sampling err CV =	0.068

min yrs to detect 50%/10yr change:

w/ regress resid CV =	9.8
w/ sample error CV =	4.6

Figure 33. Population trend for small shorebid species (*Caladris spp.*) observed on aerial survey transects sampling 30,755 km^2 of wetland tundra on the North Slope of Alaska. The total birds observed population index is the sum of birds observed as singles, birds in pairs, and all birds in flocks, indicated by column divisions from bottom to top. Vertical lines indicate 95% confidence intervals based on sampling error calculated among transects. Stratification included 11 physiographic regions. Average annual growth rate is calculated by log-linear regression. Power calculations use alpha and beta set at p=0.10 and a coefficient of variation based on either regression residuals or sampling errors. The power of the survey to detect trends can be compared for each species using an estimate of the minimum number of years necessary to detect a given slope of –0.0693, a 50% decline in 10 years.

Common Raven North Slope early-June survey



Aerial index: Total birds observed

year	sg	2*pr	flocks	Index	Std Err
1992	24	48	0	**72**	58
1993	26	0	0	**26**	25
1994	118	0	0	**118**	62
1995	101	56	0	**156**	72
1996	48	0	0	**48**	33
1997	24	0	0	**24**	24
1998	25	0	0	**25**	22
1999	72	0	0	**72**	42
2000	22	44	0	**66**	46
2001	74	0	0	**74**	38
2002	48	0	0	**48**	24

CORA

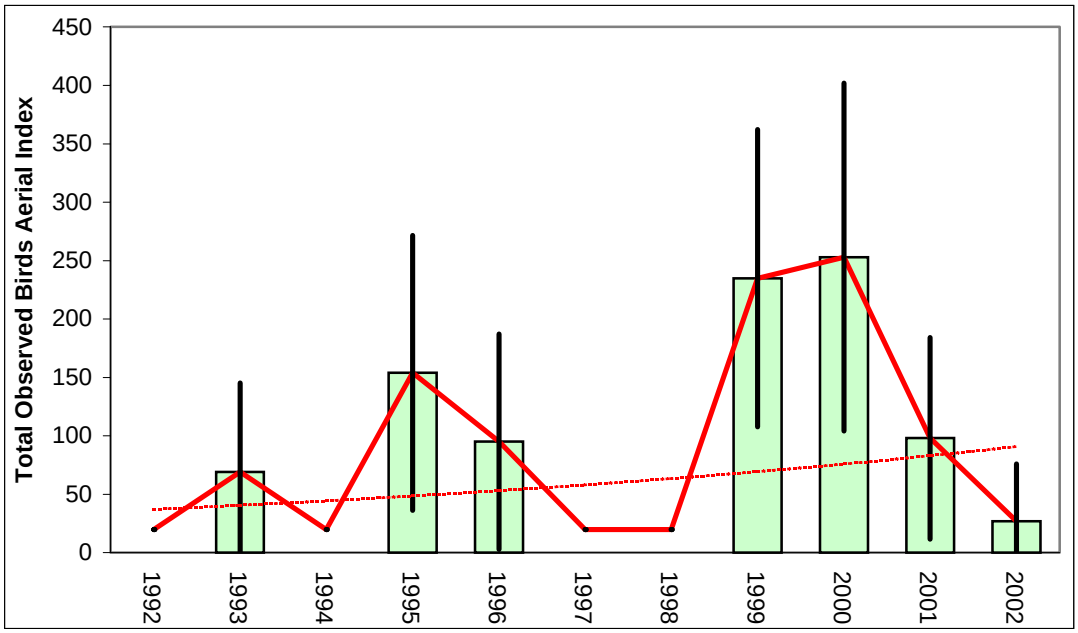
n =	11
mean =	66
slope =	-0.0162
SE slope =	0.0620
Growth Rate =	**0.984**
low 90%ci GR =	0.888
high 90%ci GR =	1.090
regression resid CV =	0.651
avg sampling err CV =	0.692

min yrs to detect 50%/10yr change:

w/ regress resid CV =	20.8
w/ sample error CV =	21.7

Figure 34. Population trend for Common Ravens (*Corvus corax*) observed on aerial survey transects sampling 30,755 km^2 of wetland tundra on the North Slope of Alaska. The total birds observed population index is the sum of birds observed as singles, birds in pairs, and all birds in flocks, indicated by column divisions from bottom to top. Vertical lines indicate 95% confidence intervals based on sampling error calculated among transects. Stratification included 11 physiographic regions. Average annual growth rate is calculated by log-linear regression. Power calculations use alpha and beta set at p=0.10 and a coefficient of variation based on either regression residuals or sampling errors. The power of the survey to detect trends can be compared for each species using an estimate of the minimum number of years necessary to detect a given slope of –0.0693, a 50% decline in 10 years.

Short-eared Owl North Slope early-June survey



Aerial index: Total birds observed

year	sg	2*pr	flocks	Index	Std Err
1992	0	0	0	**20**	0
1993	69	0	0	**69**	39
1994	0	0	0	**20**	0
1995	154	0	0	**154**	60
1996	95	0	0	**95**	47
1997	0	0	0	**20**	0
1998	0	0	0	**20**	0
1999	235	0	0	**235**	65
2000	253	0	0	**253**	76
2001	98	0	0	**98**	44
2002	27	0	0	**27**	25

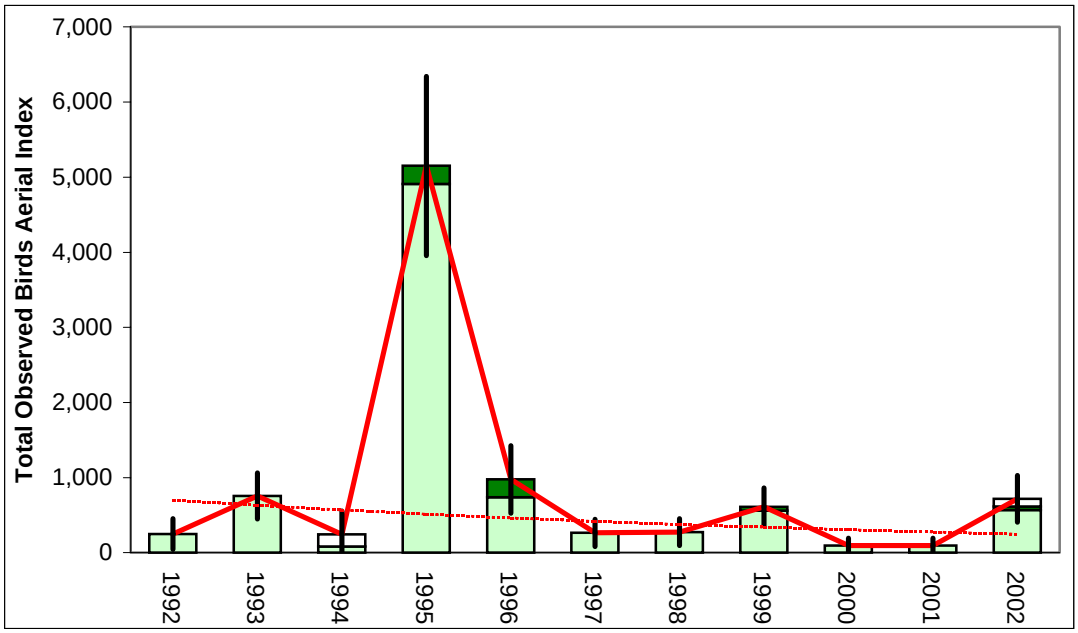
SEOW

n =	11
mean =	92
slope =	0.0891
SE slope =	0.0999
Growth Rate =	**1.093**
low 90%ci GR =	0.928
high 90%ci GR =	1.288
regression resid CV =	1.049
avg sampling err CV =	0.309

min yrs to detect 50%/10yr change:

w/ regress resid CV =	28.6
w/ sample error CV =	12.7

Figure 35. Population trend for Short-eared Owls (*Asio flammeus*) observed on aerial survey transects sampling 30,755 km^2 of wetland tundra on the North Slope of Alaska. The total birds observed population index is the sum of birds observed as singles, birds in pairs, and all birds in flocks, indicated by column divisions from bottom to top. Vertical lines indicate 95% confidence intervals based on sampling error calculated among transects. Stratification included 11 physiographic regions. Average annual growth rate is calculated by log-linear regression. Power calculations use alpha and beta set at p=0.10 and a coefficient of variation based on either regression residuals or sampling errors. The power of the survey to detect trends can be compared for each species using an estimate of the minimum number of years necessary to detect a given slope of –0.0693, a 50% decline in 10 years. To calculate slope, an index value of 20 was substituted for years with no observations.



Aerial index: Total birds observed

year	sg	2*pr	flocks	Index	Std Err
1992	251	0	0	**251**	104
1993	756	0	0	**756**	156
1994	84	0	161	**245**	160
1995	4910	240	0	**5150**	608
1996	741	236	0	**976**	228
1997	266	0	0	**266**	92
1998	276	0	0	**276**	91
1999	561	50	0	**610**	130
2000	96	0	0	**96**	51
2001	97	0	0	**97**	51
2002	571	46	100	**718**	159

SNOW

n =	11
mean =	858
slope =	-0.1027
SE slope =	0.1095
Growth Rate =	**0.902**
low 90%ci GR =	0.754
high 90%ci GR =	1.080
regression resid CV =	1.151
avg sampling err CV =	0.345

min yrs to detect 50%/10yr change:

w/ regress resid CV =	30.4
w/ sample error CV =	13.6

Figure 36. Population trend for Snowy Owls (*Nyctea scandiaca*) observed on aerial survey transects sampling 30,755 km^2 of wetland tundra on the North Slope of Alaska. The total birds observed population index is the sum of birds observed as singles, birds in pairs, and all birds in flocks, indicated by column divisions from bottom to top. Vertical lines indicate 95% confidence intervals based on sampling error calculated among transects. Stratification included 11 physiographic regions. Average annual growth rate is calculated by log-linear regression. Power calculations use alpha and beta set at p=0.10 and a coefficient of variation based on either regression residuals or sampling errors. The power of the survey to detect trends can be compared for each species using an estimate of the minimum number of years necessary to detect a given slope of –0.0693, a 50% decline in 10 years.

APPENDIX 1. Common and scientific names of species listed in this report.

Common Name	*Scientific Name*
Yellow-billed loon	*Gavia adamsii*
Pacific loon	*Gavia pacifica, G. arctica*
Red-throated loon	*Gavia stellata*
Jaeger spp.	*Stercorarius pomarinus, S. parasiticus, S. longicaudus*
Glaucous gull	*Larus hyperboreus*
Sabine's gull	*Xema sabini*
Arctic tern	*Sterna paradisaea*
Mallard	*Anas platyrhynchos*
American wigeon	*Anas americana*
Am. green-winged teal	*Anas crecca*
Northern shoveler	*Anas clypeata*
Northern pintail	*Anas acuta*
Red-breasted merganser	*Mergus serrator*
Scaup spp.	*Aythya marila, A. affinis*
Long-tailed duck	*Clangula hyemalis*
Spectacled eider	*Somateria fischeri*
Common eider	*Somateria mollissima*
King eider	*Somateria spectabilis*
Steller's eider	*Polysticta stelleri*
Black scoter	*Melanitta nigra*
White-winged scoter	*Melanitta fusca*
Snow goose	*Chen caerulescens*
White-fronted goose	*Anser albifrons*
Canada goose	*Branta canadensis*
Black brant	*Branta bernicla*
Tundra swan	*Cygnus columbianus*
Sandhill crane	*Grus canadensis*
Short-eared owl	*Asio flammeus*
Snowy owl	*Nyctea scandiaca*
Common raven	*Corvus corax*

Common Name	*Scientific Name*
Black-bellied plover	*Pluvialis squatarola*
Lesser golden plover	*Pluvialis dominica*
Bar-tailed godwit	*Limosa lapponica*
Hudsonian godwit	*Limosa haemastica*
Whimbrel	*Numenius phaeopus*
Red-necked phalarope	*Phalaropus lobatus*
Red phalarope	*Phalaropus fulicaria*
Long-billed dowitcher	*Limnodromus scolopaceus*
Ruddy turnstone	*Arenaria interpres*
Dunlin	*Calidris alpina*
Semipalmated sandpiper	*Calidris pusilla*
Pectoral sandpiper	*Calidris melanotos*